TransTerra Consulting

INTEGRATED ENVIRONMENTAL SERVICES

Preliminary Biological Resource Assessment for APN 210-221-013 Salty Dawgs Farm/Morgan Oliver

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Purpose of Study

This Preliminary[1] Biological Resource Assessment (PBRA) was prepared in accordance with Humboldt County Ordinance No. 2599, the Commercial Cannabis Land Use Ordinance (CCLUO) (Humboldt County Board of Supervisors, 2018). The goals of the CCLUO are to ensure that best management practices are implemented for all commercial cannabis operations, including strong protections for the environment. Protections for the environment include preserving sensitive habitats and preventing impacts to special status[2] plant or animal species as mandated by the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA). In addition to the CESA, the California Environmental Quality Act (CEQA) provides that species categorized as "Species of Special Concern" (SSC) "Fully Protected Species" (FP) or "Watchlisted Species" (WL) by the California Department of Fish and Wildlife (CDFW) are also considered during impact analysis.

This PBRA provides baseline biological-resource data, observations, analysis, and, as needed, mitigation recommendations to fulfil the requirements of the cannabis permitting process by Humboldt County. It is designed to determine the potential extent of special habitats and whether protocol-level special status species assessments are necessary prior to development. Additionally, in compliance with Humboldt County Ordinance 2599, section 55.4.12.16, an analysis on the presence of invasive species in the area of project activities is provided along with recommendations as needed for their control or eradication.

This PBRA includes a wetland delineation. The wetland delineation was conducted to determine whether the project complies with various ordinances regarding wetlands and waters impacts and setbacks.

Project Area

In the following report, the "Project Area" is defined as the area within the parcel where direct impacts to the environment from commercial activities may occur. On-site field assessments are

[1] This Preliminary Biological Resources Assessment was conducted to satisfy mandatory requirements for cannabis permitting by the Humboldt County Planning and Building Department. However, because the field survey was completed period outside the ideal for observing seasonally driven life cycles for plants and animals (May – September), some plant species, including seasonally flowering bulbs, biennials, and annuals, may not have been observable, and evidence for nesting and other seasonally constrained activities by animals may have been temporarily absent. As a result, full floristic surveys and/or protocol-level surveys could not be adequately completed. Therefore, the findings of this report are considered preliminary pending agency review and a determination as to the reasonable need for species-specific, protocol-level surveys to be completed at a more appropriate time. Such recommendations would be pursuant to the Final Environmental Impact Report (FEIR) amendments to the Humboldt County Code Regulating Commercial Cannabis Activities (Ascent Environmental, Inc., 2018).

[2] "Special status" plant or animal species include those that are: (1) listed as rare, threatened, or endangered under either ESA or CESA; (2) considered rare or endangered under Section 15380 of CEQA; or (3) are federally designated as "sensitive species" or State-designated "species of special concern" which, although not officially listed, are showing decline and are being monitored.

completed within the Project Area. An additional "Biological Assessment Area" (BAA) encompasses a larger buffer zone around the Project Area to evaluate the potential for indirect impacts to nearby sensitive habitats, special status species, or seasonal or migrating species, as a result of activities within the Project Area. The BAA is evaluated using online maps and databases, as described below. The BAA may extend beyond the project parcel; however, field studies are not conducted outside of parcel boundaries due to access restrictions unless otherwise specified.

Project Location and Description

The project is located on Humboldt County Assessor's Parcel Number (APN) 210-221-013 off Burr Valley Road near Bridgeville, in Humboldt County California (Table 1, Figure 1). The parcel spans 46.44 acres is approximately 3,500 to 3,800 feet above sea level.

Table 1. Parcel and Project Area overview.

Property Data	*Description*
APN #	*210-221-013*
Parcel size	*46.44-acres*
USGS 7.5-minute quadrangle	*Larabee Valley*
Location	*Section 17, T1N, R5E, Humboldt Meridian*
Humboldt County Zoning / Land-Use Designation	*Forestry Recreation, Special Building Site/ Residential Agriculture*

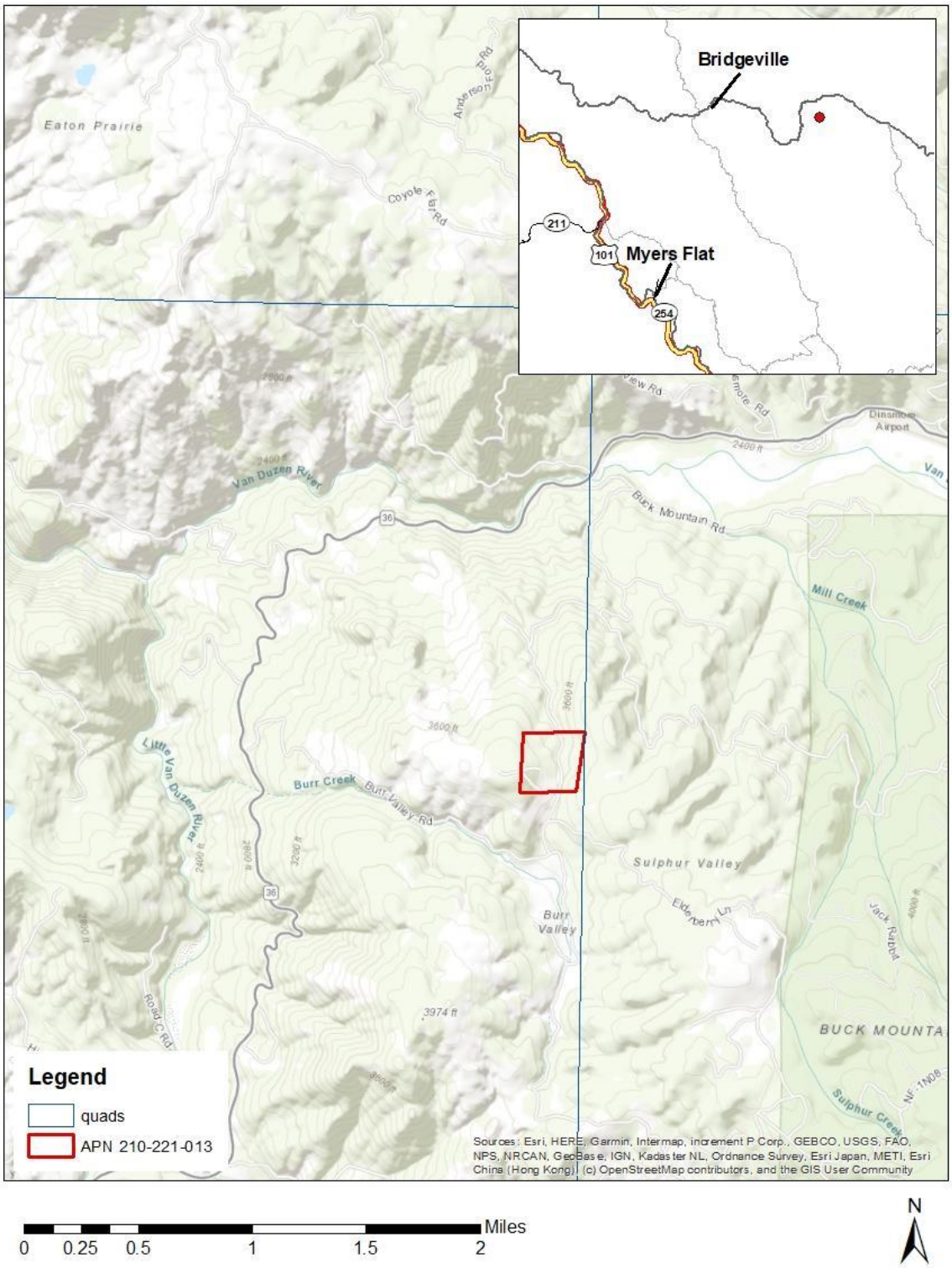

Figure 1. Project location.

The existing development on the parcel includes one (1) outdoor cultivation area (1,980 SF), one (1) outdoor cultivation area (1,260 SF), one (1) outdoor cultivation area (480 SF), one (1) outdoor cultivation area (1,800 SF), two (2) outdoor cultivation areas (2,000 SF), one (1) outdoor cultivation area (120 SF), three (3) mixed light hoop houses (600 SF), two (2) mixed light greenhouses (2,880 SF), one (1) mixed light greenhouse (800 SF), one (1) mixed light hoop house (1,400 SF), one (1) indoor immature plant area (600 SF), several animal pen areas, six (6) storage containers for hay, nutrients, garbage, cannabis waste, and equipment, one (1) residence with a septic tank and leach field, three (3) pump houses, one (1) spring, four (4) water tanks (2,800-gallon), four (4) water tanks (5,000-gallon), one (1) water tank (1,250-gallon), one (1) fire suppression water tank (2,800-gallon), two (2) storage sheds, one (1) propane tank (200-gallon), two rain catchment ponds (130,000-gallon and 800,000-gallon), three (3) domestic ponds (130,000-gallon, 250,000-gallon, and 1,500-gallon), and four (4) stream crossings.

The proposed development on-site includes one metal building for cannabis processing.

Figure 2. Aerial image of the Project Area and existing infrastructure (Google Earth 2020).

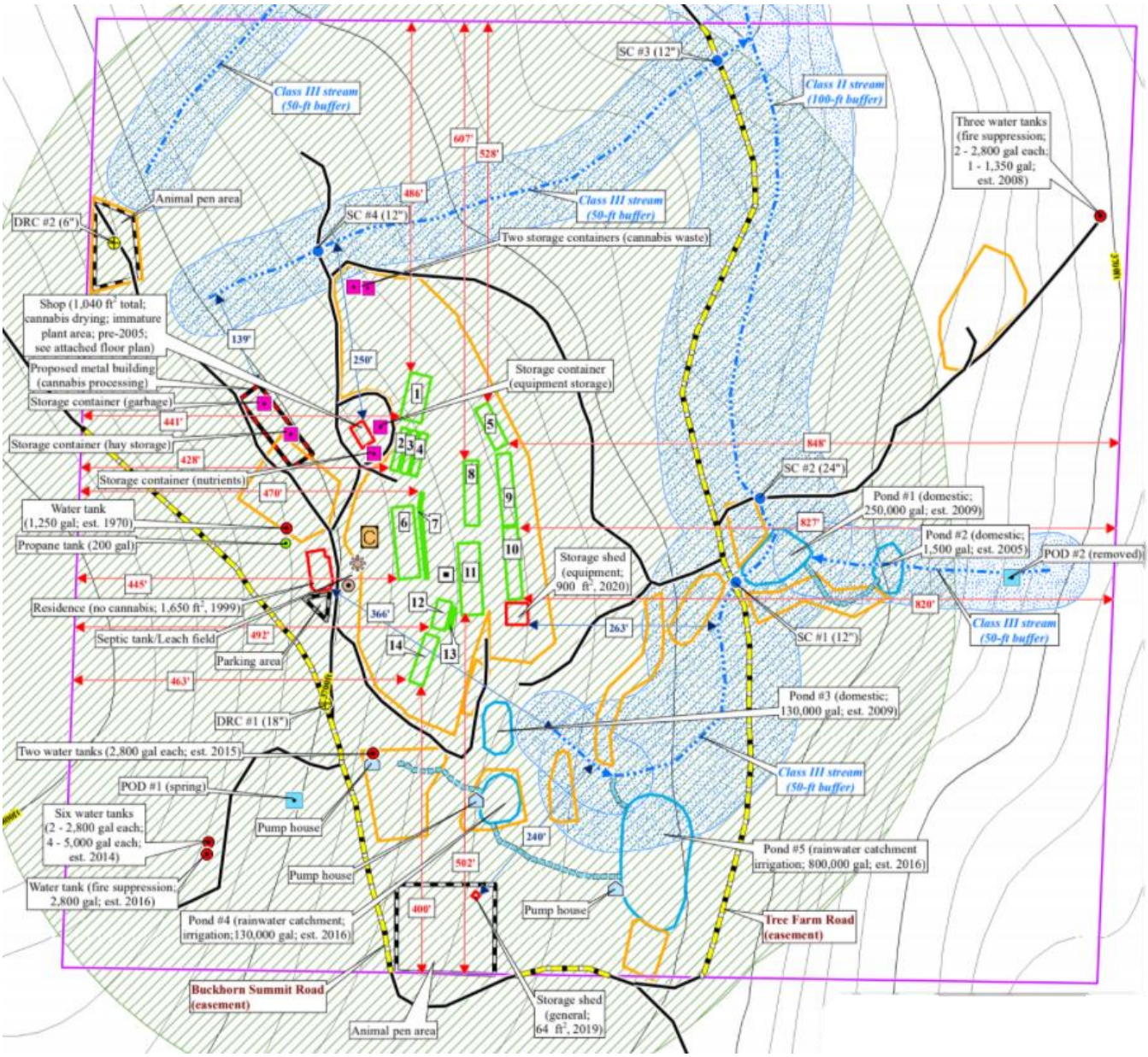

Figure 3. Map showing proposed project activities (Provided by Pacific Watershed Associates).

METHODS

A PBRA is based on information from several sources: (1) published research, maps, and databases showing the distribution of ecological habitats, soil types, water courses, topography, and the local and regional distribution of special status plant and animal species; (2) on-site field evaluations and data collection by a certified, professional biologist; and, where applicable, (3) consultation with knowledgeable outside sources such as federal, state, or county scientists or land managers, private consultants, and property owners.

Records Search and Literature Review

Occurrences of biological species are a function of their physical environment. Therefore, prior to on-site field assessments, TransTerra compiles hydrologic, physiographic, habitat, and species-distribution information for the project site and vicinity. Where applicable, watercourses and wetland areas are identified through the Humboldt GIS Portal[3] and the National Wetlands Inventory[4] (NWI). Soil types are mapped with the Natural Resource Conservation Service Web Soil Survey[5] or the Humboldt GIS Portal. Topography and elevation data are compiled from USGS 7.5-minute topographic maps. General habitat distribution and historical land-use are determined from Google Earth Pro (v.7.3) aerial imagery. Base maps for the field assessments are compiled using the Avenza Systems field mapping application[6].

Lists of special status plant and animal species with a potential to occur in the Project Area are compiled from the CDFW's California Natural Diversity Database (CNDDB)[7], which includes the stand-alone Spotted Owl Observations Database[8]; and the California Native Plant Society (CNPS) database[9]. The databases are searched using a 9-quad query that includes the USGS 7.5-minute quadrangle in which the project site is located plus the surrounding 8 quadrangles. Other pertinent resources for special status species in Humboldt County include the Jepson Manual, Second Edition (Baldwin et al., 2012) and the Arcata Fish and Wildlife Office website[10]. The local and regional species-distribution data from these sources are cross-referenced with the physiography and habitat types at the project site to generate a refined list of species with a reasonable probability to be found at that location. The databases are also used to produce a map of specific locations near the Project Area where special status species can be

[3] https://humboldtgov.org/1357/Web-GIS

[4] https://www.fws.gov/wetlands

[5] https://websoilsurvey.sc.egov.usda.gov

[6] https://www.avenza.com/avenza-maps

[7] https://wildlife.ca.gov/Data/CNDDB

[8] https://wildlife.ca.gov/Data/CNDDB/Spotted-Owl-Info

[9] http://www.rareplants.cnps.org/

[10] https://www.fws.gov/arcata/es

observed in the field, for comparison with specimens on-site. The California Invasive Plant Council (Cal-IPC) inventory[11] is the primary reference for documenting invasive plants in the Project Area.

Field Survey and Data Collection

The area covered by the field assessment for this PBRA was determined by the project description provided by the client, in addition to observations for any possible adjacent areas of direct, indirect, or cumulative effects, as discussed below. Though protocol level surveys for plants were not conducted, surveys for sensitive natural communities follow CDFW's (2018) Protocol for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. The reconnaissance survey includes an assessment of the various habitats present in the Project Area, to include any possible sensitive habitat types or habitats associated with rare plant species; an inventory of plant species; and an inventory of wildlife signs including tracks, scat, ground dwellings, and tree habitats (e.g., cavities, nests, scrapes, or accumulated vegetation). All observations of habitats, including watercourses or wetland areas, and evidence for pertinent floral and faunal species are recorded on-site, to include photo documentation.

ENVIRONMENTAL SETTING

The BAA is located in the North Coast Ranges Subregion of the Northwestern California Region of the California Floristic Province (Jepson Flora Project, 2020). The climate classification for this area is Warm Temperate (Köppen, 1936), with moderate to warm temperatures on average and most precipitation occurring during winter months.

The property is within the subwatershed Mill Creek-Van Duzen River found within the Van Duzen Planning Watershed. Elevations on the property range from approximately 3,500 ft to 3,800 ft. The BAA is primarily slightly sloping to sloping, with slopes ranging between approximately 15 to 50 percent.

Steep slopes within North Coast Ranges are prone to high instability and landsliding (Kelsey, 1978). Historic landslides, potential liquefaction, or other geologic hazards are not evident in the BAA (Humboldt County, 2020). The Eaton Roughs Fault Zone lies approximately 0.24 miles to the east of the property. The parcel is mapped as having geology of high instability. Fire risk for the area during dry periods is high to very high in severity.

Soils

The kinds of soils on a property will strongly influence whether or not sensitive natural communities or special status plants will be present. For example, hydric soils, which are seasonally, or permanently saturated soils as found in wetlands, or soils that possess unique "edaphic characteristics" such as high serpentine content, provide the required substrate for the growth and survival of particular sensitive communities and plants. Soil types from the National Resources Conservation Service Web Soil

[11] https://www.cal-ipc.org/plants/inventory

Survey[12] are listed below. These soil assessments are estimations of soils located on-site and are often not accurate at a fine scale.

Four main soil types are mapped on the parcel (Figure 4, Table 2), with Highyork-Elkcamp-Airstrip complex, 9 to 30 percent slopes (4421), Pasturerock-Coyoterock-Maneze complex, 15 to 50 percent slopes, dry (4426), and Coyoterock-Maneze-Highyork complex, 15 to 50 percent slopes (4431) series found in the BAA. These soils are (1) nonhydric; and (2) not known to possess edaphic characteristics associated with the distribution of sensitive natural communities or special status plants. NRCS soil mapping was not confirmed on-site. Studies regarding soil types and prime agricultural soils are outside of the scope of this report.

Table 2. Soils mapped on the parcel and BAA.

Map Unit Symbol	*Map Unit Name*	*Description*	*Hydric?*
4421	Highyork-Elkcamp-Airstrip complex, 9 to 30 percent slopes	*Highyork: consists of very deep, somewhat poorly drained soils that formed in material weathered from chloritic schist and other metasedimentary rocks. Highyork soils are on concave to slightly convex mountain slopes with slopes of 15 to 50 percent at elevations ranging from 1970 to 3610 ft. Highyork soils have very high runoff and moderately low saturated hydraulic conductivity* *Elkcamp: consists of very deep, well drained soils formed in colluvium and residuum derived from sandstone, siltstone, and mudstone. Elkcamp soils are on slope breaks and irregular slopes in mountainous terrain. This series has slopes of 15 to 50 percent and elevations of 615 to 3220 ft. These soils are formed in slow-moving earthflows.* *Airstrip: consists of moderately deep, well drained soils formed in colluvium and residuum derived from sandstone and siltstone. Airstrip soils are on strongly convex ridge tops, spur ridges, and mountain slopes. The slopes are 9 to 50 percent with elevations of 220 to 3385 ft.*	*N*
4426	Pasturerock-Coyoterock-Maneze complex, 15 to 50 percent slopes, dry	*Pasturerock: consists of very deep, well drained soils formed in colluvium derived from sandstone and mudstone. Pasturerock soils are on mountains and have slopes of 15 to 50 percent. This series is found at elevations of 170 to 4000 ft. The Pasturerock series has very high runoff with moderately low saturated hydraulic conductivity.* *Coyoterock: consists of very deep, moderately well drained soils formed in colluvium and residuum derived from sandstone and mudstone. Coyoterock soils are in moist locations on poorly incised drainages, hillslope hollows, and earthflows on mountain slopes. Slopes are 15 to 50 percent with elevations of 520 to 4000 ft.* *Maneze: consists of very deep, well drained soils formed in colluvium and residuum derived from sandstone, mudstone, and siltstone. Maneze soils are on convex, upper mountain side slopes and spur ridges. Slopes are 15 to 50 percent with elevations at 520 to 3160 ft.*	*N*
4431	Coyoterock-Maneze-Highyork complex, 15 to 50 percent slopes	*Coyoterock: see 4426 series* *Maneze: see 4426 series* *Highyork: see 4421 series*	*N*

[12] https://websoilsurvey.sc.egov.usda.gov/

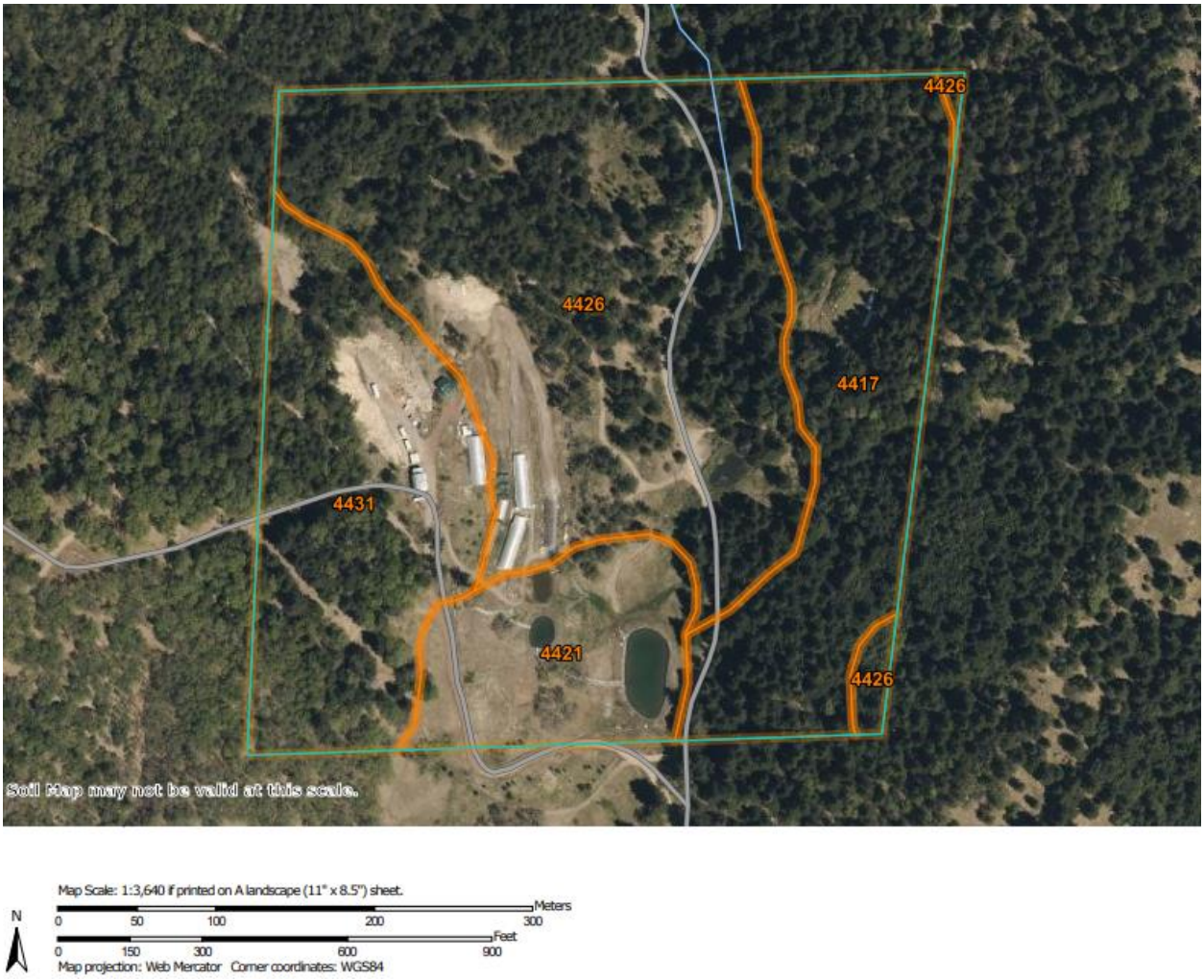

Figure 4. Soil types mapped on the parcel and BAA from the National Resources Conservation Service Web Soil Survey.

Watercourses

Watercourses in California are designated as Class I, II, III, or IV based on their annual flow capacity and role in supporting aquatic life (Table 3). Generally, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class

III watercourse or wetlands. conditions on enrollment, including site-specific riparian buffers and other BMPs beyond those identified in water resource protection plans to ensure water quality protection[13].

Table 3. Definitions of Class I-IV watercourses.

Class	*Definition*
I	*Perennial streams that contain fish or are domestic water supplies*
II	*Perennial streams that do not contain fish but do contain other aquatic life or are within 1,000 ft (305 m) of a Class I stream*
III	*Watercourses that do not support aquatic life but have the potential to deliver sediment to a Class I or II stream.*
IV	*Human-made streams for domestic, agricultural, or hydroelectric supply or for other beneficial use.*

There are four Class III streams, one Class II stream, three domestic ponds, and two rain catchment ponds in the BAA (Figure 3).

Wetlands and Streamside Management Areas

Wetlands, as defined by the USDA-Natural Resources Conservation Service (NRCS), are areas that (1) have a predominance of hydric soils; and (2) are inundated or saturated by surface or groundwater at levels necessary to support hydrophytic vegetation that require saturated soil conditions. For this study, a formal wetland delineation per USACE was performed for by TransTerra Consulting (see *Jurisdictional Wetland Delineation* section).

A "Streamside Management Area" (SMA) is a legally designated buffer zone along streams and aquatic habitats where extra precaution is required to protect water quality. Section 314-61.6 of the Humboldt County General Plan provides for the protection of SMAs along perennially and intermittent streams as well as other wet areas such as natural ponds, springs, vernal pools, marshes and wet meadows.

A review of the NWI database and Humboldt GIS Web Portal showed a reach of the Van Duzen River on the southern section of the property with the BAA found approximately 370 ft to the northwest (Figure 5). However, these GIS databases may not capture the full, accurate scope of waterways in the area. Pacific Watershed Affiliates provided mapping with SMA buffers to determine appropriate setbacks (Figure 3).

13 https://www.waterboards.ca.gov/water_issues//programs/cannabis/docs/policy/final_cannabis_policy_with_attach_a.pdf

Figure 5. Map of watercourses, Streamside Management Areas (SMAs) and wetlands on the property as mapped by Humboldt County GIS.

Other Hydrologic Resources

There are several pump houses on the parcel and one point of diversion spring.

JURISDICTIONAL WETLAND DELINEATION

TransTerra staff conducted a wetlands delineation focused on identifying wetlands that meet the definition of the U.S. Army Corp of Engineers (USACE). Holly Vadurro (BA in Biology, certified in wetland delineation) and Margaux Karp (BS in Biology) of TransTerra Consulting conducted the wetland delineation on November 20, 2020. The wetlands delineation followed the USACE criteria (three-parameter approach) from the Corps of Engineers Wetlands Delineation Manual (USACE, 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (USACE, 2010).

Existing aerial imagery to stratify and delineate vegetation polygons, unvegetated areas and visible inundation prior to field work. Watercourses and nearby wetland areas were identified through the

Humboldt GIS Portal[14] and the National Wetlands Inventory (NWI)[15]. Anthropogenic and natural disturbance patterns were evaluated using historical aerial imagery. This information was used to assess proper transect location.

Vegetation and soil data were collected at one transects across the presumed wetland boundary with two plots (upland/wetland). Soil pits were dug to approximately 10-15 inches. Data on soil color, texture and redoximorphic features and hydrologic conditions was collected. Vegetation data collection consists of listing the dominant species at each plot. The species are classified as to whether or not they are wetlands indicators, using the most current standard reference for plant wetland indicators: State of California 2016 Wetland Plant List (Lichvar et al. 2016). The list classifies plants based on the probability that they would be found in wetlands, ranging from Obligate (almost always in wetlands), Facultative/wet (67% to 99% in wetlands), Facultative (34% to 66% in wetlands), Facultative/up 1% to 33% in wetlands) to Non-indicator (less than 1% in wetlands). If 50% or greater of the dominant plant species at each plot were classified as either Obligate (OBL), Facultative/wet (FACW), or Facultative (FAC), the vegetative mix is determined to be hydrophytic (wetland plants).

A determination of the wetland boundary is made based on soil, hydrology (if present), and vegetative parameters (three parameter approach). Once wetland and upland characteristics are determined for each transect, data points are collected on the wetland boundary. Transect points along the wetland boundary were mapped using Avenza Systems field mapping application. Polygons were created using ArcMap 10.8.

[14] https://humboldtgov.org/1357/Web-GIS

[15] https://www.fws.gov/wetlands

Wetland Results

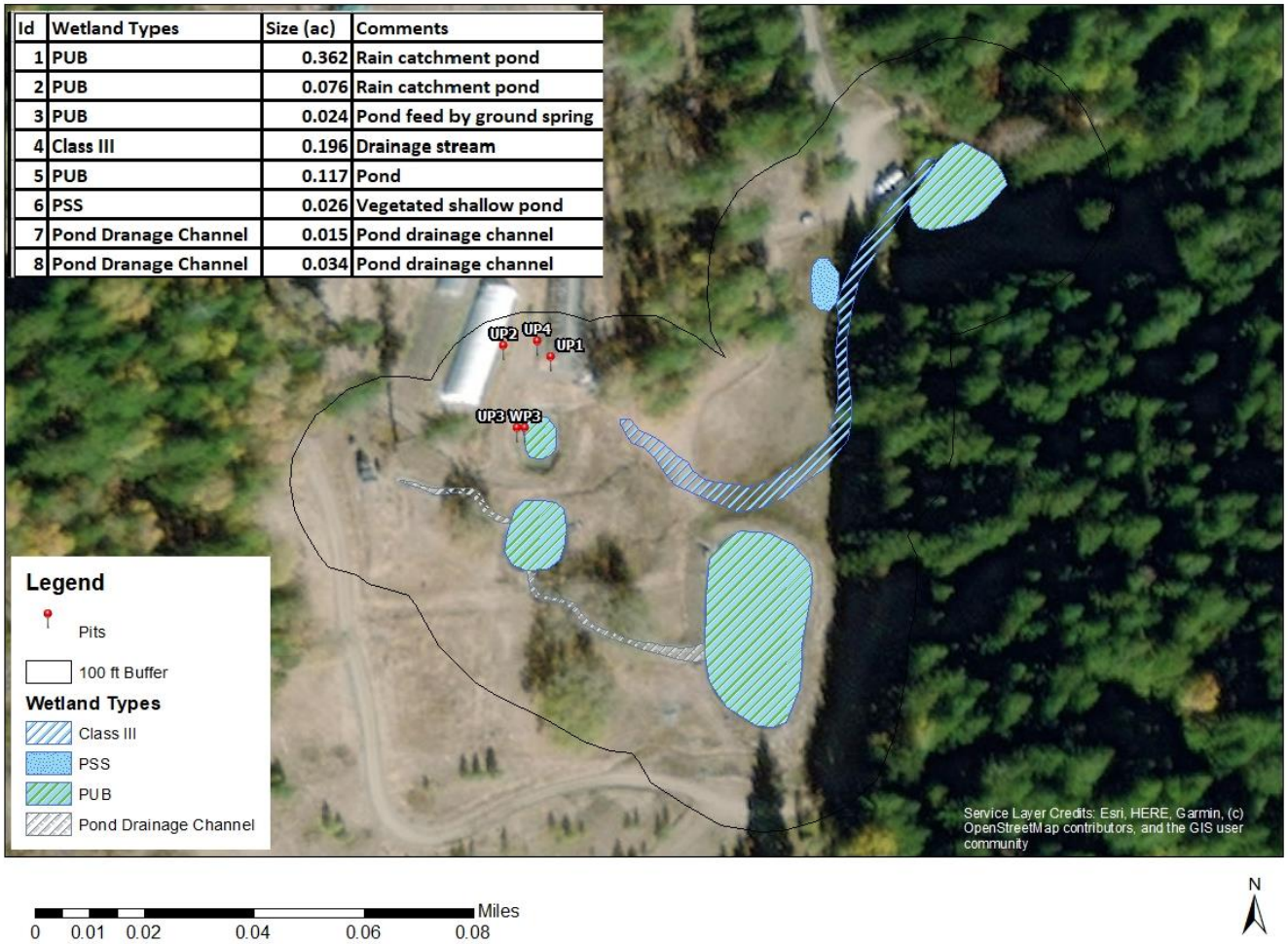

Figure 6. Wetland delineation results

The area contained multiple freshwater ponds (classified as PUB though PEM classification could be warranted around perimeter of wetlands. The pond area totals, calculated using GIS, totaled .605 acres in total. One pond totaling .024 acres appeared to be fed by spring water. The remaining ponds appeared to be fed solely by rain catchment. Class III watercourses and associated riparian vegetation totaled .245 areas in the vicinity of the pond where the delineation was conducted.

Wetland Conclusion

The pond complex was a highly disturbed area that was difficult to delineated due to invasive species and disturbed soils. The hydrology of the area was a mixture of rain-fed catchment ponds and spring fed ponds. The delineation of most of the pond area was completed using observable hydrology for this reason. Due to the drought year and atypical circumstances, wetlands could exist outside of the delineated areas, however historic aerial imagery indicates that the area was likely grassland.

Portions of the cultivation appear to be within the 100' buffer of the pond complex. The pond that was most likely constructed on existing wetland is the closest to the cultivation area.

Google Earth Imagery indicates that the pond complex was constructed in phases ranging from 2009 to 2015.(See photos A through D below)

A

B

C

D

Images from 2009 to 2020 show that the ponds were constructed in phases. In 2010 two ponds appear towards the north and northeast. In 2018 two additional ponds appear. The arrow in the 2009 image indicates an area that appeared to be wetland prior to conversion. The remaining areas appear to be scrub (northeastern pond) or grassland (southern ponds).

Vegetation Communities

Natural terrestrial communities in the Project Area are designated based on the CDFW criteria originally described in Holland (1986) to facilitate habitat available for sensitive species. Wetland communities are based on Cowardin et al. (1979). Sensitive natural communities are designated based on lists and alliances described using *A Manual of California Vegetation* (CNPS, 2020).

The property is largely dominated by the following vegetation types:

Valley and Foothill Grasslands

Non-native grassland was present throughout the entire cultivation area. Identification of species was difficult due to seasonal timing of the field visit. Wild teasel (*Dipsacus fullonum*), Bristly dogtail grass (*Cynosurus echinatus*), and Medusa head (*Elymus caput-medusae*) were present.

- NON-NATIVE GRASSLAND (42200)

DESCRIPTION: A dense to sparse cover of annual grasses with flowering culms 0.2-0.5 (1.0) m high. Often associated with numerous species of showy- flowered, native annual forbs ("wildflowers"),

especially in years of favorable rainfall. Germination occurs with the onset of the late fall rains; growth, flowering, and seed-set occur from winter through spring. With a few exceptions, the plants are dead through the summer-fall dry season, persisting as seeds.

SITE FACTORS: On fine-textured, usually clay soils, moist or even waterlogged during the winter rainy season and very dry during the summer and fall. Oak Woodland (71100) is often adjacent on moister, better drained soils.

CHARACTERISTIC SPECIES. *Avena barbata, A. fatua, Bromus mollis, B. rigidus, B. rubens, Erodium botrys, E. cicutarium, Eschscholzia californica, Gilia* sp., *Hemizonia* sp., *Lasthenia* sp., *Layia* sp., *Festuca multiflorum, Lupinus* sp. *Lepidium* sp., *Medicago* sp., *Nemophila menziesii, Orthocarpus* sp., *Phacelia* ssp., *Vulpia* sp.

This vegetation type was present throughout the Project Area in the openings within the surrounding forest habitat.

North Coast Coniferous Forests

- DOUGLAS FIR (82400)

The forest surrounding the cultivation area is represented by Douglas Fir Forest. Oregon oak (*Quercus garryana*) was observed as a small component of this community.
Douglas fir forest is present throughout the BAA.

Summary: The Project Area consisted primarily of Valley and Foothill Grassland as Non-native Grassland with recently disturbed terraces landings and multiple man-made ponds. Wild teasel (*Dipsacus fullonum*), Bristly dogtail grass (*Cynosurus echinatus*), and Medusa head (*Elymus caput-medusae*) dominated the area. The lowest pond in elevation in the northeast of the parcel is the least disturbed and surrounded by Arroyo willow (Salix lasiolepis), Narrow-leaved cattail (*Typha angustifolia*), and Soft rush (*Juncus effusus*). The surrounding forest in the BAA is primarily North Coast Coniferous Forest as Douglas Fir Forest which is dominated by Douglas fir (*Pseudotsuga menziesii var. menziesii*). Oregon oak (*Quercus garryana*) was also present in small amounts.

Table 4. Plan species observed during field assessment

Layer	*Scientific Name*	Common Name	WVM 2014
Herb	*Elymus caput-medusae*	Medusa head	UPL
Herb	*Cynosurus echinatus*	Bristly dogtail grass	UPL
Herb	*Typha angustifolia*	Narrow-leaved cattail	OBL
Herb	*Dipsacus fullonum*	Wild teasel	FAC
Herb	*Polystichum munitum*	Western sword fern	FACU
Herb	*Achillea millefolium*	Common yarrow	FACU
Herb	*Bromus hordeaceus*	Soft chess	FACU
Herb	*Avena sativa*	Cultivated oat	UPL
Herb	*Rumex crispus*	Curly dock	FAC
Herb	*Juncus effusus*	Soft or lamp rush	FACW
Herb	*Anthoxanthum odoratum*	Sweet vernal grass	FACU

Herb	*Cirsium vulgare*	Bull thistle	FACU
Herb	*Verbascum* sp.	Mullein	
Shrub	*Phoradendron* sp.	Mistletoe	UPL
Shrub	*Symphoricarpos albus var. laevigatus*	Common snowberry	FACU
Shrub	*Berberis* sp.	Oregon-grape	UPL
Tree	*Quercus garryana*	Oregon oak	FACU
Tree	*Pseudotsuga menziesii var. menziesii*	Douglas-fir	FACU
Tree	*Salix lasiolepis*	Arroyo willow	FACW

Offsite Conditions

Offsite conditions primarily consist of adjacent residence, openings of grasslands within the Douglas Fir Forest.

SENSITIVE NATURAL COMMUNITIES

Natural Communities are part of the "Natural Heritage conservation triad" (CDFW, 2020) for California, tracked along with plants and animals. "Sensitive Natural Communities" are those that are rare either within the state or globally, and are currently ranked by CDFW, CNPS, and other groups within California based on Manual of California Vegetation, 2nd Edition (CNPS, 2020). CDFW considers alliances and associations with a S1 to S3 rank to be Sensitive (CDFW, 2019).

Riparian habitats may be considered to be sensitive natural communities as they qualify as wetlands or "waters of the state" or "waters of the U.S." as regulated by Regional Water Quality Control Board or U.S. Army Corps of Engineers through the *Clean Water Act* and/or the *Porter-Cologne Water Quality Control Act*. The only community identified on-site was Douglas Fir Forest and Woodland Alliance, which is ranked S4, G5 (CNPS, 2020). No alliance was associated with the Non-native Grassland as none of the dominants observed are associated with an alliance through CNPS. No sensitive natural communities were identified in the BAA.

INVASIVE PLANT SPECIES

Background on Controlling Invasive Species

Section 55.4.12.16 of Humboldt County Ordinance 2599 requires cooperation on the part of cannabis permit holders in the control and eradication of invasive plant species in the county. Section 55.4.12.16 states "It is the responsibility of a certificate or permit holder to work to eradicate invasive species. As part of any application, the existence of invasive species on the project parcel(s) need to be identified, including the type(s) of invasive plant species, where they are located, and a plan to control their spread. All invasive plant species shall be removed from the cultivation site and associated infrastructure using measures appropriate to the species. Removal shall be confirmed during subsequent annual inspection. Corrective action may be required if invasive species are found to have returned" (Humboldt County Board of Supervisors, 2018, p. 44).

Preventing invasive species from becoming established can be more effective than restoring an injured ecosystem. Controlling established invasive species is difficult, and complete eradication is extremely difficult. Prevention is the best approach for avoiding the loss of valuable native species that may be pushed out and replaced by pest species.

Natural pathways for the introduction and dispersal of invasive plant species include wind, water or animals. Areas disturbed by both natural and human causes (roadsides, trails, log landings, energy transmission rights-of-way, and construction zones) are particularly susceptible to invasion and should be targeted for prevention efforts (monitoring, equipment washing), as these are likely sources of seed or propagules for the translocation of invasive species. Motorized and non-motorized transportation devices (including ATVs and bicycles) transport seeds of invasive plants.

The California Invasive Plant Council (Cal-IPC) inventory[16] is the most current and comprehensive database of invasive plants in California and was used to define and list the plants considered "invasive" in the BAA. Invasive species are assigned a rating based on the potential severity of their impact on the environment as follows:

- High. These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
- Moderate. These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
- Limited. These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.
- Alert. An Alert rating is applied to species that currently have High or Moderate impacts outside California and limited distributions within the state but show a potential to increase their distribution and impact on the state.
- Watch. These species have been assessed as posing a high risk of becoming invasive in the future in California.

Invasive species identified on-site are subject to mitigation measures and subsequent annual inspections to ensure compliance.

[16] https://www.cal-ipc.org/plants/inventory

Invasive Species Observed in the BAA

Invasive species observed in the BAA are listed in Table 4. Because the assessment did not take place during the blooming period for some species, a full floristic list is not available and other invasive species could be present on the property. Appropriate mitigation measures should be taken to control and eradicate all invasive species on-site, as described below. Removal of the invasive species of Bull thistle should be prioritized on-site where feasible.

Table 5. Invasive plants observed in the Project Area

Layer	*Scientific Name*	Common Name	Rating	Comments
Herb	*Avena sativa*	Cultivated oat		Located throughout Project Area and BAA. Naturalized, difficult to remove and low priority
Herb	*Elymus caput-medusae*	Medusa head	high	Located throughout Project Area and BAA. Naturalized, difficult to remove and low priority
Herb	*Cynosurus echinatus*	Bristly dogtail grass	moderate	Located throughout Project Area and BAA. Naturalized, difficult to remove and low priority
Herb	*Rumex crispus*	Curly dock	limited	Located throughout Project Area and BAA. Naturalized, difficult to remove and low priority
Herb	*Cirsium vulgare*	Bull thistle	moderate	Located in patches throughout Project Area and BAA. Moderate to high priority. Removal recommended where feasible.
Herb	*Anthoxanthum odoratum*	Sweet vernal grass	moderate	Located throughout Project Area and BAA. Naturalized, difficult to remove and low priority
Herb	*Bromus hordeaceus*	Soft chess	limited	Located throughout Project Area and BAA. Naturalized, difficult to remove and low priority
Herb	*Dipsacus fullonum*	Wild teasel	moderate	Located in throughout Project Area and BAA. Naturalized, low priority. Difficult to remove.

SPECIAL STATUS BIOLOGICAL RESOURCES

The following analysis of biological resources is based on field observations and 9-quad database searches for historical or existing occurrences of special status animals and all plant species. Appendix B includes a list of all plant species recorded in the area from the CNPS inventory, their preferred habitat, and an analysis of their potential to occur in the BAA and Project Area. Special status animals in the 9-quad area from the CNDDB, their preferred habitat, and potential to be found in the BAA and Project Area are listed in Appendix C. Additionally, the CNDDB was queried for occurrences of special status species within a 1-mile radius of the BAA (Figure 6). The field assessment for this project was completed on November 20, 2020 by TransTerra associate Biologists Margaux Karp and Holly Vadurro.

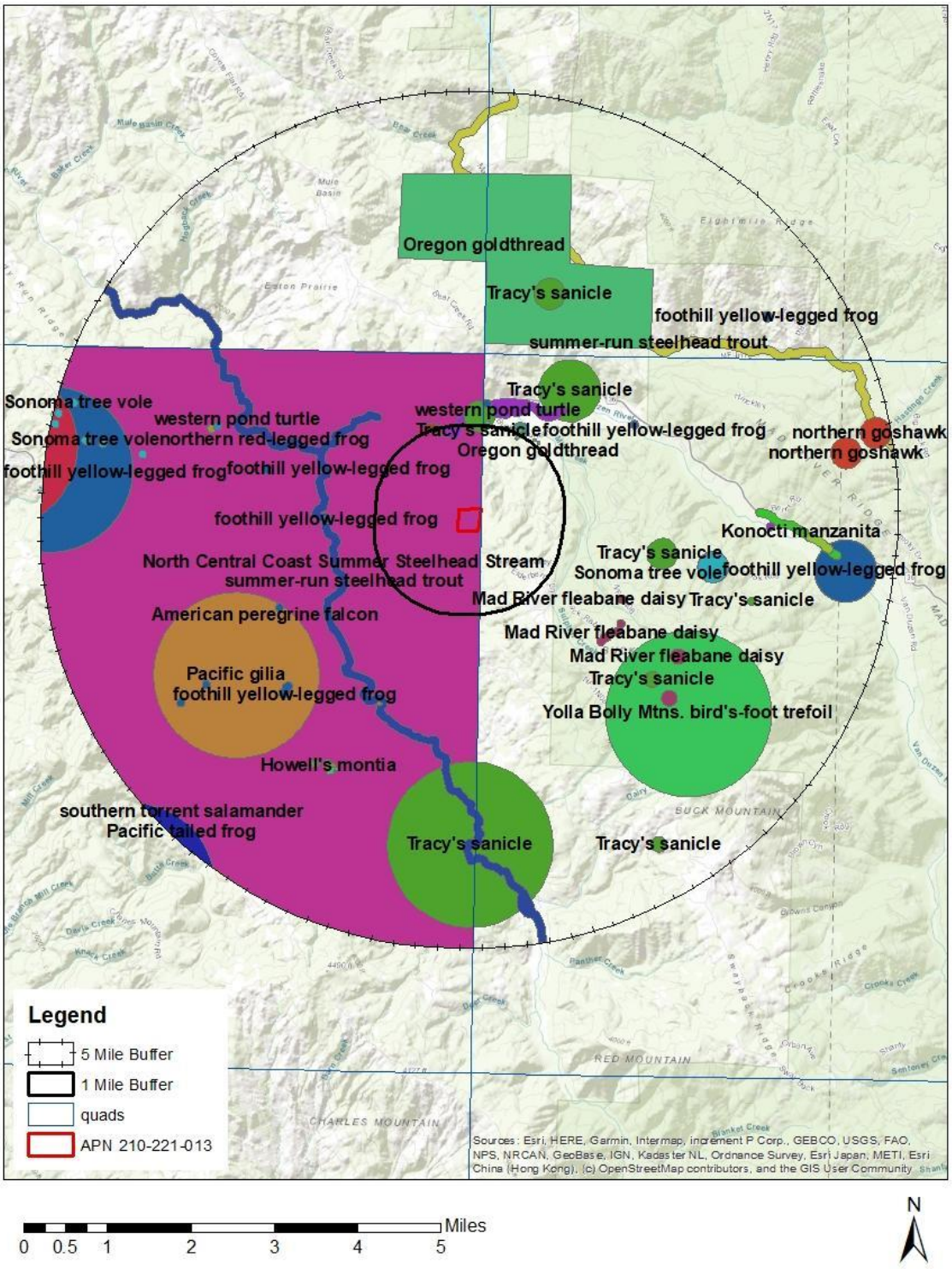

Figure 7. Map of previously recorded observations for special status species in the vicinity of the BAA.

The metrics for determining the potential for species to be found in the project, as listed in Appendices B and C, are defined as:

- None: there is no appropriate habitat for the species in the Project Area or BAA.
- Low: there are no previous records of occurrence in the 9-quad area, and minimal or marginal suitable habitat in the Project Area or BAA.
- Moderate: there are some previously recorded occurrences in the 9-quad area, and there is appropriate habitat in the Project Area or BAA.
- High: there are numerous previously recorded observations in the 9-quad area, including observations near the Project Area or BAA, and the Project Area or BAA includes highly available and appropriate habitat.
- Present: species were observed during the on-site field assessment.

Special Status Plant Species

The results of the database queries identified 50 special status plant species in the 9-quad area (Appendix B). Additionally, three of these species were previously recorded within a 1-mile radius of the Project Area (Figure 6). Species possessing high or moderate potentials to be found in the Project Area and/or BAA were determined:

1. Oregon goldthread (*Coptis laciniata*) is listed as a CNPS 4.2, denoting it a watchlist species. It occupies north coast coniferous forest, meadows and seeps. This species is found in mesic sites such as moist streambanks with elevations of 0-1000 m. Moderate suitable habitat is present in the coniferous forest habitat in the BAA. Observations in the database were recorded within one mile.

2. Tracy's sanicle (*Sanicula tracyi*) is a CNPS 4.2, which is considered a watchlist species. It occupies cismontane woodlands, lower montane conifer forest and upper montane conifer forest. It is generally on dry gravelly slopes or flats and usually in or at the margin of oak woodland with scattered trees ranging from 100-1590 meters in elevation. Observations were recorded within one mile of the Project Area in the database. Moderate suitable habitat is present in the BAA in the coniferous forest habitat.

Summary: Results of the database queries showed three rare plant species recorded within 1-mile of the Project Area including Oregon goldthread, Coast fawn lily, and Tracy's sanicle. Two rare plant species, including Oregon goldthread and Tracy's sanicle, were determined to have a moderate potential to be found in the BAA. Twenty-four special status plants were determined to have low potentials to occur in the BAA. No rare plant species were determined to have high potentials to occur in the BAA or Project Area. Results of the field assessment showed minimal suitable habitat on-site for most species and no evidence for these taxa within the Project Area. No impacts are expected to rare plant species; however, the time of field assessment was not ideal for the blooming period of many species.

Special Status Animal Species

The results of the database queries identified 23 special status animal species in the 9-quad area (Appendix C). Additionally, three of these species were previously recorded within a 1-mile radius of the

Project Area (Figure 6). Species possessing moderate or high potentials to be found in the Project Area and/or BAA were determined:

1. Wawona riffle beetle (*Atractelmis wawona*) is not currently listed but is a watch list species. The species was observed near the project site. It is found in riffles or rapid, small to medium clear mountain streams from 2000-5000 feet in elevation. It has a strong preference for inhabiting submerged aquatic mosses. Suitable habitat in the BAA is present within the perennial stream, but streams closest to the Project Area are intermittent and not appropriate habitat for this species.

2. Westen pond turtle (*Emys marmorata*) is a thoroughly aquatic turtle, usually found below 6000 ft elevation. It is found in ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation. They need suitable upland habitat, such as sandy banks or grassy open fields, up to 0.5 km from water for egg-laying. Basking sites are also necessary for *Emys marmorata*. The several ponds in the BAA with grassy openings for basking provide suitable habitat for this species to occur. Observations in the database were recorded within 5 miles.

3. American peregrine falcon (*Falco peregrinus anatum*) is a federally, as well as California state delisted species. It is found near wetlands, lakes, rivers, or other water, usually located on cliffs, banks, dunes, mounds, or occasionally human-made structures. Their nests consist of a scrape, depression, or ledge in an open site. The North Coast Coniferous Forest habitat in the BAA with adjacent and nearby watercourses provide suitable habitat for this species.

4. Cooper's hawk (*Accipiter cooperii*) occupy dense strands of live oak, riparian deciduous, or other forest habitats near water at ranges from sea level to above 2700 meters in elevation. They often hunt in broken woodland and habitat edges. Nesting and foraging often occurs near open water or riparian vegetation. The North Coast Coniferous Forest habitat in the BAA with adjacent and nearby watercourses provide suitable habitat for this species.

5. Northern goshawk (*Accipiter gentilis*) is a CDFW species of special concern. This species occupies a variety of coniferous forest habitat including Red fir, Jefferey pine, aspens, and lodgepole pine. Northern goshawks will use old nests primarily on northern slopes that are located near water. Appropriate habitat is present in the BAA for this species. The opening present in the Project Area may be utilized for hunting of prey, but existing development and domestic animal presence may deter species.

6. Golden eagle (*Aquila chrysaetos*) are found throughout North America but are more common in western North America. They inhabit a variety of habitats including forests, canyons, shrub lands, grasslands, and oak woodlands. The golden eagle breeds from late January through August and produces 1-3 eggs. Nests are constructed on platforms on steep cliffs or in large trees. The main prey species for the golden eagle are rabbits, hares and rodents, but are not exclusive to these. Appropriate habitat is present in the BAA for this species. The opening present in the Project Area may be utilized for hunting of prey, but existing development and domestic animal presence may deter species.

7. Sonoma tree vole (*Arborimus pomo*) are found only in humid coastal old-growth forests of northern California and Oregon. They primarily feed on the outer parts of conifer needles. This species has an affinity to nest and live in Douglas fir, but can also be found in Grand fir and Sitka spruce. The coniferous

forest with primarily Douglas fir in the BAA provides suitable habitat for this species to occur. Observations were recorded in the database within 5 miles of the BAA.

8. Coastal tailed frog (*Ascaphus truei*) or Pacific-tailed frog inhabit moist, rocky, and usually well-shaded streambanks. Males have a 'tail' that they use to internally fertilize females through copulation. Tadpoles often have a white spot on the tip of their tails and wide, flat, and downward facing mouths that help them suction onto rocks. The various watercourses including the Class II stream in the BAA provide potential suitable habitat for this species to occur.

9. Obscure bumble bee (*Bombus caliginosus*) occupies coastal areas from Santa Barbara County north to Washington state. Their food plant genera include *Baccharis* sp., *Cirsium* sp., *Lupinus* sp., *Lotus* sp., *Grindelia* sp. and *Phacelia* sp. Appropriate food plant genera is present in the BAA.

10. Western bumble bee (*Bombus occidentalis*) while once common & widespread, the species has declined precipitously from central CA to southern B.C., perhaps due particularly to the parasite microsporidian *Nosema bombi*. The BAA is present broad species habitat range.

11. Townsend's big-eared bat (*Corynorhinus townsendii*) are found throughout California in a wide variety of habitats. They are most commonly located in mesic sites. This species roosts in the open, hanging from walls and ceilings. This limits their roosting sites and makes them extremely sensitive to human disturbance. The various man-made structures in the Project Area and the coniferous forest adjacent in the BAA provide suitable habitat for this species to occur.

12. North American porcupine (*Erethizon dorsatum*) is not a California state or a federal listed species. It is, however, included in the CNDDB query. It occupies a wide variety of coniferous and mixed woodland habitat. They are found in these forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges. The coniferous forest in the BAA provides suitable habitat for this species.

13. Humboldt marten (*Martes caurina humboldtensis*) is an endangered candidate species in California. It occurs in the coastal redwood zone from the Oregon border south to Sonoma County. This species is associated with late-successional coniferous forests, preferring forests with low, overhead cover. While not ideal, the North Coast Coniferous Forest in the BAA provides potential suitable habitat for this species.

14. Long-eared myotis (*Myotis evotis*) is found in all brush, woodland, and forest habitats ranging from sea level to about 9000 ft. It prefers coniferous woodlands and forests. This species will occupy nursery colonies in buildings, crevices, spaces under bark, and snags, while caves are used primarily as night roosts. The various man-made structures in the Project Area and the coniferous forest adjacent in the BAA provide suitable habitat for this species to occur.

15. Long-legged myotis (*Myotis Volans*) is most common in woodland and forest habitats above 4000 ft. Trees serve as important day roosts while caves and mines are usually reserved for night roosts. The nursery colonies are usually under bark or in hollow trees, but occasionally in crevices or buildings. The various man-made structures in the Project Area and the coniferous forest adjacent in the BAA provide suitable habitat for this species to occur; however, the property is slightly lower than 4,000 ft in elevation.

16. Osprey (*Pandion haliaetus*) prefer ocean shore, bays, freshwater lakes, and larger streams. They build large nests in treetops within 15 miles of a good fish-producing body of water. The Project Area and BAA provide suitable habitat within the coniferous forest and being less than two miles from the Van Duzen and Little Van Duzen Rivers.

17. Fisher (*Pekania pennanti*) is California state listed as a species of special concern. It occupies intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. This species uses cavities, snags, logs and rocky areas for cover and denning. They need large areas of mature, dense forest for habitat. The coniferous forest in the BAA provides suitable habitat for this species.

18. Northern red-legged frog (*Rana aurora*) is California state listed as a species of special concern. It occupies humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. It is generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season. The various watercourses, including ponds, within coniferous forest in the BAA contained potential habitat for this species.

19. Foothill yellow-legged frog (*Rana boylii*) is California state listed as a threatened candidate species. It occupies partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. This species needs at least some cobble-sized substrate for egg-laying. A least 15 weeks is required to attain metamorphosis. Appropriate habitat is present in the BAA and Project Area in the stream and pond watercourses and surrounding areas.

20. Southern torrent salamander (*Rhyacotriton variegatus*) is California state listed as a species of special concern. It is found in coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats, particularly old growth forest. It prefers occupying cold, well-shaded, permanent streams and seepages, within splash zones, or on moss-covered rocks within trickling water. The perineal stream and pond watercourses present within coniferous forest in the BAA contain potential habitat for this species.

Summary: Results of the CNDDB database query showed three special-status animal species with previous observations in the database within 1-mile of the Project Area. These species include Wawona riffle beetle, Western pond turtle, and American peregrine falcon.

Ten species were determined to have a high potential to occur in the BAA including Northern goshawk, Sonoma tree vole, Pacific tailed frog, Western pond turtle, North American porcupine, American peregrine falcon, Fisher, Northern red-legged frog, Foothill yellow-legged frog, and Southern torrent salamander. There were also ten species determine to have a moderate potential to occur in the BAA. These species include Cooper's hawk, Golden eagle, Wawona riffle beetle, Obscure bumble bee, Western bumble bee, Townsend's big-eared bat, Marten, Long-eared myotis, Long-legged myotis, and Osprey.

Three species were determined to have a high potential to occur in the Project Area including Western pond Turtle, Northern red-legged frog, and Foothill yellow-legged frog. Fifteen species were determined to have a moderate potential to occur in the Project Area including Cooper's hawk, Northern goshawk, Golden eagle, Pacific tailed frog, Obscure bumble bee, Western bumble bee, Townsend's big-eared bat,

North American porcupine, American peregrine falcon, Marten, Long-eared myotis, Long-legged myotis, Osprey, Fisher, and Southern torrent salamander.

Suitable habitat for some special status animals was recorded during the field assessment, but evidence for these taxa, was not detected in the Project Area. The proposed project is unlikely to adversely affect the species for which habitat is present on-site as much of the project is existing. Noise due to project activities may influence the presence of the special status species that contain appropriate habitat in the BAA and Project Area.

Northern Spotted Owl

In 2016, the California Fish and Game Commission approved the listing of the Northern spotted owl (*Strix occidentalis caurina*) as Threatened under the California Endangered Species Act. It had been listed as Threatened under the federal Endangered Species Act since 1990. Preferred nesting habitat includes broken-top trees, tree cavities, debris accumulations, or abandoned nests built by other wildlife such as raptors or rodents. Females generally lay 1 to 2 eggs in spring and chicks fledge and leave nests in early fall. Although old growth forests with dense canopy closure are preferred for nesting and roosting, younger stands with similar structure are also utilized. Structural components of high-quality stands include multiple canopy layers, higher species density, larger overstory trees, live trees with deformities, and woody debris in the understory. Prey species include flying squirrels, woodrats, rabbits, voles, shrews, gophers, smaller birds, bats, and insects. The CDFW reports that threats to the northern spotted owl are numerous and include the rapid expansion of competing populations of barred owls; habitat loss; climate change including increased frequency of wildfires; and exposure to pathogens[17].

From the CDFW Northern spotted owl database, critical habitat for northern spotted owl is located about 1.00 mile to the east of the parcel. The HUM0155 activity center, established in 1988 by Tilghman-Patron, lies approximately 1.00 mile to north of the parcel. Both positive and negative observations were denoted in the database spanning from 1988 to 2005. The last positive observation for this activity center was noted in 2002. The HUM0152 and HUM0983 activity centers lies just outside of the one-mile buffer to the east and southwest, respectively, but have positive and negative observations within one mile (Figure 7).

[17] https://www.wildlife.ca.gov/Conservation/Birds/Northern-Spotted-Owl

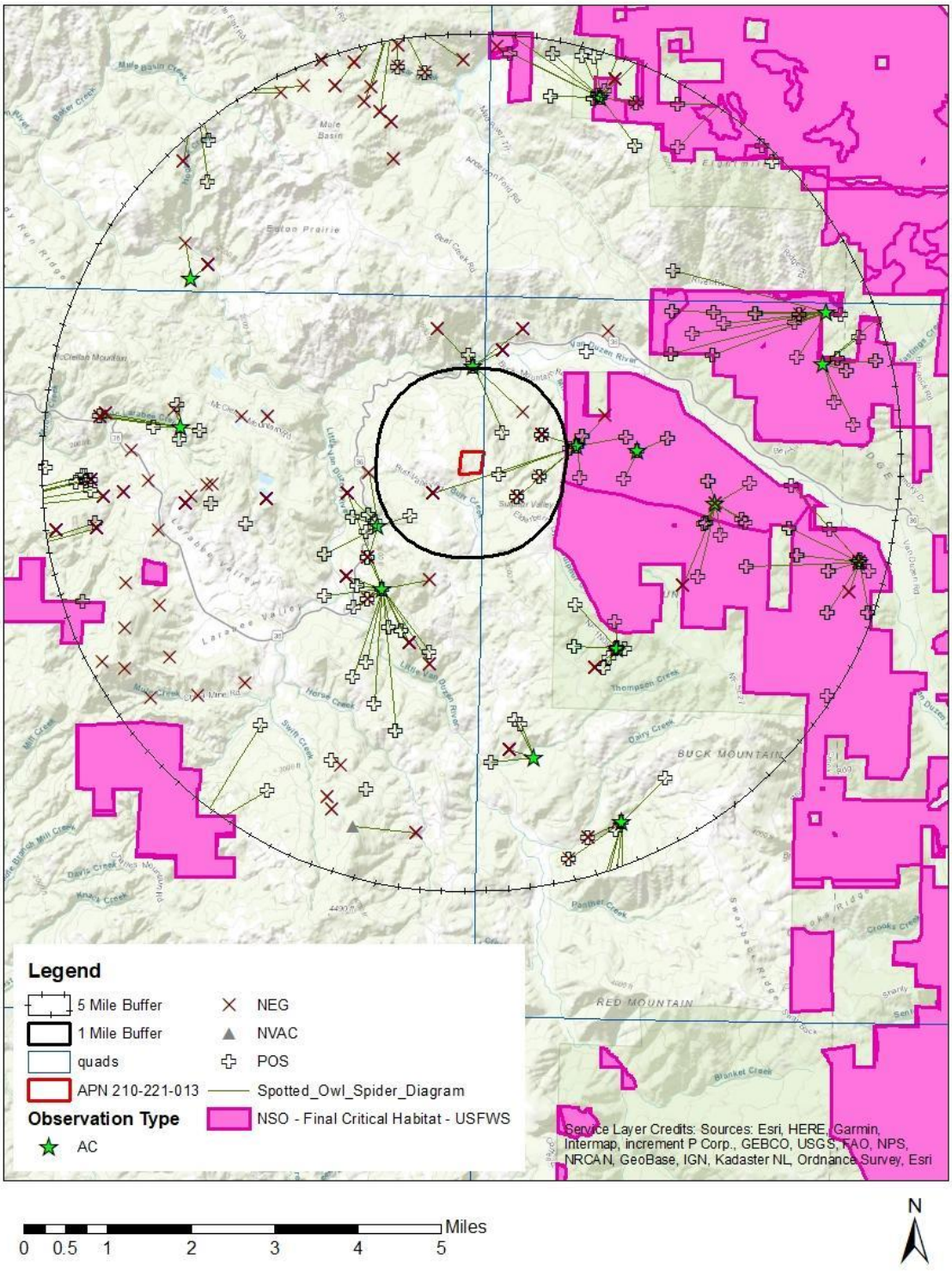

Figure 8. Map of previously recorded observations of Northern spotted owl in the vicinity of the BAA.

Potential Direct, Indirect, and Cumulative Impacts

Determining the extent of environmental impacts post factum including magnitude, duration and extent is challenging. The potential direct, indirect, and cumulative effects of the development of cultivation activities already in place have not been thoroughly analyzed. This impact assessment is based upon proposed activity associated with proposed cannabis cultivation.

The potential direct, indirect, and cumulative effects of cultivation activities include removal of vegetation and canopy cover, disturbance and compaction of soil, alteration of hydrologic regime, sedimentation and erosion, increase in invasive species, and noise, solid and chemical waste pollution, visual impacts, and air quality impacts.

The site was fairly well maintained with no solid waste or hazardous materials observed. The proposed project does not include work on water crossings; however, several watercourses are located on-site in the BAA and work near or within these could cause temporary impacts to aquatic species. These impacts will be addressed through the Lake and Streambed Alteration Agreement (LSAA) and Water Resource Protection Plan (WRPP). Erosion was evident on the roadway in the Project Area.

Tree clearing is not currently proposed, nor is additional grading. The only expansion proposed is a metal building for cannabis processing, otherwise, all other development is existing. The extent of noise from generator, alternate power sources, or fan use is currently not known; however, noise due to project activities may influence the presence of those special status animals that have suitable habitat in the BAA and Project Area.

Summary: While no direct activities are proposed in watercourse, indirect impacts from project activities could affect aquatic species, which shall be addressed through the Lake and Streambed Alteration Agreement (LSAA) and Water Resource Protection Plan (WRPP). Noise due to project activities may influence the presence of special status animals that have suitable habitat in the BAA and Project Area.

Agency personnel from CDFW and USFWS can further analyze the potential impacts and provide technical assistance for any listed species if additional activities are proposed that may result in take of a listed species including the Western pond turtle, American peregrine falcon, Wawona riffle beetle, Sonoma Tree Vole, Cooper's hawk, Northern goshawk, Golden eagle, Pacific tailed frog, Obscure bumble bee, Western bumble bee, Townsend's big-eared bat, North American porcupine, Marten, American peregrine falcon, Long-eared myotis, Long-legged myotis, Osprey, Northern red-legged frog, Fisher, Foothill yellow-legged frog, Southern torrent salamander, and Northern spotted owl (e.g., Arcata Fish and Wildlife Office, 2006). If required, pre-construction reconnaissance surveys should follow the guidelines set forth in the Humboldt County Cannabis Program EIR (Ascent Environmental, Inc., 2018); the CDFW Survey and Monitoring Protocols and Guidelines (CDFW, 2020); guidelines from the Arcata Fish and Wildlife Office website on the Endangered Species Program[18]; and the CNPS Botanical Survey Guidelines (CNPS, 2001).

[18] https://www.fws.gov/arcata/es/

RECOMMENDATIONS

Follow all recommendations outlined by existing agency policies for minimizing impacts to natural resources. Impacts from light, noise and chemicals can be addressed in the operations plan and best management practices can be employed to minimize impacts. Additional disturbance, clearing, and road cuts could modify existing groundwater, and surface water patterns and could impact water quality and/or hydrophytic species.

It is recommended that catchment ponds be drained annually to prevent Bull frog (*Lithobates catesbeianus*) infestation. A certified biologist may provide a survey during the appropriate time to establish if there is evidence for Bull frogs in the ponds if draining is not preferred.

As the most northwestern pond was most likely constructed in an existing wetland and is nearest to the cultivation area, restoration of the area to a natural wetland complex is recommended. Coordination with agency personnel would be required prior to developing a mitigation or restoration plan.

It is recommended that the road in the Project Area be altered to decrease erosion, especially since the road is upslope of the several ponds and watercourses on-site.

Please contact me with any comments or concerns regarding this report or future work required for your project. I can be reached at tami@trans-terra.com or (707) 840-4772. I have included our staff experience as an attachment to this report as it is often requested by agency personnel reviewing work of this nature.

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FIELD FORMS

SOIL

Sampling Point: 1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/1	90					C/L	clay, wet soil.
	2.5Y 2.5/1	10						Some Gravel
7-15	10YR 2/1	65	10YR 5/6	25	C	M	C/L	
	5Y 2.5/1	10						Some Iron
								Reduction.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Larger rocks on top from grading above sloped area.
Matrix Value of 5 or more + chroma of 1 or less.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No / Depth (inches): ___

Water Table Present? Yes ___ No / Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No / Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soil damp and clay but no hydro. indications.

US Army Corps of Engineers — Western Mountains, Valleys, and Coast – Version 2.0

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Salty Dawg City/County: Humboldt Sampling Date: 11/20/20
Applicant/Owner: Morady State: CA Sampling Point: 1W
Investigator(s): Holly, Maragux Section, Township, Range: APN 210-221-013
Landform (hillslope, terrace, etc.): pond cutbank Local relief (concave, convex, none): sloping Slope (%): 15
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✓ (If no, explain in Remarks.) Heavy rainfall prior
Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ✓
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.) drought year

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks: Heavy rainfall prior to survey, plant ID difficult as outside of ideal blooming period. Some prior disturbance of topsoils likely.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1. Avena sativa	25	✓	UPL
2. Elymus caput-medusae	25	✓	NOL
3. Dipsacus fullonum	25	✓	FAC
4. Plantago lanceolata	5		FACU
5.			
6. Other	15		
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 25	x 1 = 25
FACW species ___	x 2 = ___
FAC species 25	x 3 = 75
FACU species 5	x 4 = 20
UPL species ___	x 5 = ___
Column Totals: 55 (A)	120 (B)

Prevalence Index = B/A = 2.18

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:
Identification of some species difficult due to date of survey; Sample on pond cutbank; pond fed by spring 30yo dam

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Salty Dawg City/County: Humboldt Sampling Date: 11/20/20
Applicant/Owner: Morgan State: Sampling Point: 2U
Investigator(s): Holly Morgan Section, Township, Range: 210-221-013 APN
Landform (hillslope, terrace, etc.): cutbank Local relief (concave, convex, none): sloping Slope (%): ~20
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✓ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ___, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ✓
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	Is the Sampled Area within a Wetland? Yes ___ No X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks: Heavy rainfall prior, on hillside near cultivation area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Dipsacus fullonum	61	✓	FAC
2. Anthoxanthum odoratum	20	✓	FACU
3. Juncus effusus	10		FACW
4. Avena sativa	2		UPL
5. Other	2		
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size:)			
1. other 5% gopher holes			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 10	x 2 =	20
FAC species 61	x 3 =	183
FACU species 20	x 4 =	80
UPL species 2	x 5 =	10
Column Totals: 93 (A)		293 (B)

Prevalence Index = B/A = 3.15

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: sample on road cutbank, other species not identified due to season.

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SOIL

Sampling Point: 2U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
5-15	10YR 2/2	100				M	C/L	Gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks: low value/chroma but no redox

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: On hillslope Near Cultivation Site.

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Salty Dawg City/County: Humboldt Sampling Date: 11/20/20
Applicant/Owner: Morgan State: Sampling Point: 3U
Investigator(s): Holly, Margaux Section, Township, Range: APN - 210-221-013
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Slope (%): 30
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No ____
Wetland Hydrology Present? Yes ____ No ____
Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: Heavy rainfall Prior to sample.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Elymus caput-medusae	65	✓	NOL
2. Dipsacus fullonum	25	✓	FAC
3. Anthoxanthum odoratum	3		FACU
4. Cynoserus echinatus	2		NOL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 25	x 3 =	75
FACU species 3	x 4 =	26
UPL species	x 5 =	
Column Totals: 28 (A)		(B)

Prevalence Index = B/A = 3.39

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: cut bank of pond (30yr. old) where spring enters pond

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SOIL

Sampling Point: 3U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/3	100				M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: Compact/Rocks
Depth (inches): 12

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Slightly wet from some drainage but not saturated

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Salty Dawg City/County: Humboldt Sampling Date: 11/30/20
Applicant/Owner: Morgan State: Sampling Point: 3W
Investigator(s): Holly, Margaux Section, Township, Range: APN 210-221-013
Landform (hillslope, terrace, etc.): cutbank slope Pond Local relief (concave, convex, none): Slope (%): 5
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✓ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ✓
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	Is the Sampled Area within a Wetland? Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks: Adjacent to Pond.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1. Juncus effusus	20	✓	FACW
2. Typha angustifolia	20	✓	OBL
3. Elymus caput-medusae	20	✓	NOL
4. Ripsacus fullonum	3		FAC
5. Anthoxanthum odoratum	3		FACU
6. Cynosurus echinatus	3		NOL
7. Rumex crispus	1		FAC
8.			
9.			
10.			
11.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		
% Bare Ground in Herb Stratum 30			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	20	x 1 = 20
FACW species	20	x 2 = 40
FAC species	4	x 3 = 12
FACU species	3	x 4 = 12
UPL species		x 5 =
Column Totals:	47 (A)	84 (B)

Prevalence Index = B/A = 1.79

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
adjacent to pond

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SOIL

Sampling Point: 3W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	GLEY1 3/10Y	100				M	C/L	Wet Soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- X Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks: wet pit close to pond. Appears to have drainage into this area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Some water pooled on top of soil from drainage and recent rainfall.

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Salty Dawg City/County: Humboldt Sampling Date: 11/20/20
Applicant/Owner: State: Sampling Point: 4U
Investigator(s): Holly, Margaux Section, Township, Range: APN 210-221-013
Landform (hillslope, terrace, etc.): Graded Flat Local relief (concave, convex, none): Slope (%): 2
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes X No ____
Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: Heavy Rainfall prior, but normal for time of year. On graded flat near drainage. Some water present but no hydro veg or soils.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Anthoxanthum odoratum	62	✓	FACU
2. Dipsacus fullonum	15		FAC
3. Cynosurus echinatus	2		NOL
4. Other			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species 15	x 3 = 45
FACU species 62	x 4 = 248
UPL species ____	x 5 = ____
Column Totals: 77 (A)	293 (B)

Prevalence Index = B/A = 3.81

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Highly disturbed – directly adjacent to ditch; Ident Anthoxanthum best guess, mowed area

SOIL

Sampling Point: 4U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	5YR 3/1	100				M	C/L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks: near drainage on graded flat, likely disturbed
no redox but low chroma

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 0-1

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: near drainage so some water in soil, but recent high rain fall.

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APPENDIX A
Project Site Photographs

Photo 1. Northern most rain catchment pond

Photo 2. Pond fed by spring adjacent to cultivation areas

Photo 3. Project Area and greenhouse structures on graded flats

Photo 4. Roadway through Project Area with some erosion

APPENDIX A
Project Site Photographs

	
Photo 5. Greenhouse structure on graded flat in Project Area	

APPENDIX B

Results of the CNPS Database 9-quad Search for Rare Plants

Central USGS 7.5-minute quadrangle used for search: **Larabee Valley**

CRPR: California Rare Plant Rank (https://www.cnps.org/rare-plants/cnps-rare-plant-ranks)

1B.1	Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California.	2B.2	Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California.	4.1	Plants of limited distribution; seriously threatened in California.
1B.2	Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California.	2B.3	Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California.	4.2	Plants of limited distribution; fairly threatened in California.
1B.3	Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California.	3.1	Plants about which we need more information; seriously threatened in California.	4.3	Plants of limited distribution; not very threatened in California.
2A	Plants presumed extirpated in California, but more common elsewhere.	3.2	Plants about which we need more information; fairly threatened in California.		
2B.1	Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California.	3.3	Plants about which we need more information; not very threatened in California.		

Scientific Name	Common Name	Lifeform	CRPR	Blooming Period	Habitat	Potential to Occur in:	
						BAA	Project Area
Allium hoffmanii	Beegum onion	perennial bulbiferous herb	4.3	Jun-Jul	Lower montane coniferous forest (serpentinite)	None-Project parcel lower than elevation range and no serpentine	None-Project parcel lower than elevation range and no serpentine
Anisocarpus scabridus	scabrid alpine tarplant	perennial herb	1B.3	(Jun)Jul-Aug(Sep)	Upper montane coniferous forest (metamorphic, rocky)	None- Project parcel too low in elevation	None- Project parcel too low in elevation

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Results of the CNPS Database 9-quad Search for Rare Plants

Arctostaphylos hispidula	Howell's manzanita	perennial evergreen shrub	4.2	Mar-Apr	Chaparral (serpentinite or sandstone)		None-habitat not present
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	perennial evergreen shrub	1B.3	(Jan)Mar-May(Jul)	Chaparral, Cismontane woodland, Lower montane coniferous forest	Low-Coniferous forest present	Low-Coniferous forest present
Arnica spathulata	Klamath arnica	perennial rhizomatous herb	4.3	May-Aug	Lower montane coniferous forest (serpentinite)	None- no serpentine	None- no serpentine
Astragalus agnicidus	Humboldt County milk-vetch	perennial herb	1B.1	Apr-Sep	Broadleafed upland forest, North Coast coniferous forest	None- Project parcel too high in elevation	None- Project parcel too high in elevation
Astragalus rattanii var. rattanii	Rattan's milk-vetch	perennial herb	4.3	Apr-Jul	Chaparral, Cismontane woodland, Lower montane coniferous forest	None- Project parcel too high in elevation	None- Project parcel too high in elevation
Astragalus umbraticus	Bald Mountain milk-vetch	perennial herb	2B.3	May-Aug	Cismontane woodland, Lower montane coniferous forest	Low-Coniferous forest present	Low-Coniferous forest present
Calycadenia micrantha	small-flowered calycadenia	annual herb	1B.2	Jun-Sep	Chaparral, Meadows and seeps (volcanic), Valley and foothill grassland	None- habitat not observed	None-no habitat in project area
Carex praticola	northern meadow sedge	perennial herb	2B.2	May-Jul	Meadows and seeps (mesic)	Low- open wet areas in Coniferous forest present	Low- open wet areas in Coniferous forest present
Carex scabriuscula	Siskiyou sedge	perennial rhizomatous herb	4.3	May-Jul	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	Low- open wet areas in Coniferous forest present	Low- open wet areas in Coniferous forest present
Collomia tracyi	Tracy's collomia	annual herb	4.3	Jun-Jul	Broadleafed upland forest, Lower montane coniferous	Low-Coniferous Forest present	Low-Coniferous Forest present

APPENDIX B

Results of the CNPS Database 9-quad Search for Rare Plants

					forest		
Coptis laciniata	Oregon goldthread	perennial rhizomatous herb	4.2	(Feb)Mar-May(Sep-Nov)	Meadows and seeps, North Coast coniferous forest (streambanks)	Moderate- observation recorded on edge of 1 mile perimeter from parcel boundary	Moderate- observation recorded on edge of 1 mile perimeter from parcel boundary
Cryptantha rostellata	red-stemmed cryptantha	annual herb	4.2	Apr-Jun	Cismontane woodland, Valley and foothill grassland	None- Project parcel too high in elevation	None- Project parcel too high in elevation
Cypripedium fasciculatum	clustered lady's-slipper	perennial rhizomatous herb	4.2	Mar-Aug	Lower montane coniferous forest, North Coast coniferous forest	Low-Coniferous Forest present	Low-Coniferous Forest present
Cypripedium montanum	mountain lady's-slipper	perennial rhizomatous herb	4.2	Mar-Aug	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest	Low-Coniferous Forest present	Low-Coniferous Forest present
Epilobium oreganum	Oregon fireweed	perennial herb	1B.2	Jun-Sep	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	Low- open wet areas in Coniferous forest present	Low- open wet areas in Coniferous forest present
Epilobium septentrionale	Humboldt County fuchsia	perennial herb	4.3	Jul-Sep	Broadleafed upland forest, North Coast coniferous forest	Low-Coniferous Forest present	None-habitat not present
Erigeron maniopotamicus	Mad River fleabane daisy	perennial herb	1B.2	May-Aug	Lower montane coniferous forest, Meadows and seeps (open, dry)	None- Project parcel too low in elevation	None- Project parcel too low in elevation
Erythronium oregonum	giant fawn lily	perennial bulbiferous herb	2B.2	Mar-Jun(Jul)	Cismontane woodland, Meadows and seeps	Low- habitat not	None-habitat not

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Results of the CNPS Database 9-quad Search for Rare Plants

						observed	present
Erythronium revolutum	coast fawn lily	perennial bulbiferous herb	2B.2	Mar-Jul(Aug)	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	Low- Coniferous Forest present	None-habitat not present
Eucephalus glabratus	Siskiyou aster	perennial herb	4.3	Jul-Sep	Lower montane coniferous forest, Upper montane coniferous forest	Low- Coniferous Forest present	Low- Coniferous Forest present
Fritillaria glauca	Siskiyou fritillaria	perennial bulbiferous herb	4.2	(Apr-May)Jun-Jul	Alpine boulder and rock field, Subalpine coniferous forest, Upper montane coniferous forest	None- Project parcel too low in elevation	None- Project parcel too low in elevation
Gilia capitata ssp. pacifica	Pacific gilia	annual herb	1B.2	Apr-Aug	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland	Low-grasslands present	None-habitat not present
Hosackia yollabolliensis	Yolla Bolly Mtns. bird's-foot trefoil	perennial herb	1B.2	Jun-Aug	Meadows and seeps, Upper montane coniferous forest (openings)	None- Project parcel too low in elevation	None- Project parcel too low in elevation
Howellia aquatilis	water howellia	annual herb (aquatic)	2B.2	Jun	Marshes and swamps (freshwater)	Low-area of northeast pond has potential	Low-area of northeast pond has potential
Kopsiopsis hookeri	small groundcone	perennial rhizomatous herb (parasitic)	2B.3	Apr-Aug	North Coast coniferous forest	None- Project parcel too high in elevation	None- Project parcel too high in elevation
Lathyrus biflorus	two-flowered pea	perennial herb	1B.1	Jun-Aug	Lower montane coniferous forest (serpentinite)	None- Project parcel too high in elevation	None- Project parcel too low in elevation
Lilium rubescens	redwood lily	perennial bulbiferous	4.2	Apr-Aug(Sep)	Broadleafed upland forest,	Low-Coniferous	None-habitat not

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Results of the CNPS Database 9-quad Search for Rare Plants

		herb			Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Forest present	present
Listera cordata	heart-leaved twayblade	perennial herb	4.2	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	Low-Coniferous Forest present	None-habitat not present
Lupinus constancei	The Lassics lupine	perennial herb	1B.1	Jul	Lower montane coniferous forest (serpentinite)	None- Project parcel too low in elevation	None- Project parcel too low in elevation
Lupinus elmeri	South Fork Mountain lupine	perennial herb	1B.2	Jun-Jul(Aug)	Lower montane coniferous forest	Low- project is lower than the elevation range but Coniferous forest is present	None-habitat not present
Lycopodium clavatum	running-pine	perennial rhizomatous herb	4.1	Jun-Aug(Sep)	Lower montane coniferous forest (mesic), Marshes and swamps, North Coast coniferous forest (mesic)	Low-Coniferous Forest present	None-habitat not present
Meesia triquetra	three-ranked hump moss	moss	4.2	Jul	Bogs and fens, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest (mesic)	Low-meadows and seeps present	Low-meadows and seeps present
Mitellastra caulescens	leafy-stemmed mitrewort	perennial rhizomatous herb	4.2	(Mar)Apr-Oct	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	Low-Coniferous Forest present	Low-Coniferous Forest present
Montia howellii	Howell's montia	annual herb	2B.2	(Jan-Feb)Mar-	Meadows and seeps, North	None- Project	None- Project

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Results of the CNPS Database 9-quad Search for Rare Plants

				May	Coast coniferous forest, Vernal pools	parcel too high in elevation	parcel too high in elevation
Packera bolanderi var. bolanderi	seacoast ragwort	perennial rhizomatous herb	2B.2	(Jan-Apr)May-Jul(Aug)	Coastal scrub, North Coast coniferous forest	None- Project parcel too high in elevation	None- Project parcel too high in elevation
Piperia candida	white-flowered rein orchid	perennial herb	1B.2	(Mar)May-Sep	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	Low-Coniferous Forest present	None- Project parcel too high in elevation
Pityopus californicus	California pinefoot	perennial herb (achlorophyllous)	4.2	(Mar-Apr)May-Aug	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Low-Coniferous Forest present	None-habitat not present
Platanthera stricta	slender bog-orchid	perennial herb	4.2	May-Aug	Lower montane coniferous forest, Meadows and seeps	Low-Coniferous Forest present	None-habitat not present
Ptilidium californicum	Pacific fuzz wort	liverwort	4.3	May-Aug	Lower montane coniferous forest, Upper montane coniferous forest	Low-Coniferous Forest present	None-habitat not present
Ribes laxiflorum	trailing black currant	perennial deciduous shrub	4.3	Mar-Jul(Aug)	North Coast coniferous forest	Low-Coniferous Forest present	None-habitat not present
Sabulina decumbens	The Lassics sandwort	perennial herb	1B.2	Jul	Lower montane coniferous forest, Upper montane coniferous forest	None- Project parcel too low in elevation	None- Project parcel too low in elevation
Sanicula tracyi	Tracy's sanicle	perennial herb	4.2	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous	Moderate-observation recorded on edge	None-habitat not present

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Results of the CNPS Database 9-quad Search for Rare Plants

					forest	of 1 mile perimeter from parcel boundary	
Sedum laxum ssp. flavidum	pale yellow stonecrop	perennial herb	4.3	May-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	None-habitat not present	None-habitat not present
Sidalcea malachroides	maple-leaved checkerbloom	perennial herb	4.2	(Mar)Apr-Aug	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland	None- Project parcel too high in elevation	None- Project parcel too high in elevation
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	perennial rhizomatous herb	1B.2	(Apr)May-Aug	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest	None- Project parcel too high in elevation	None- Project parcel too high in elevation
Thermopsis robusta	robust false lupine	perennial rhizomatous herb	1B.2	May-Jul	Broadleafed upland forest, North Coast coniferous forest	Low-Coniferous Forest present	Low-Coniferous Forest present
Usnea longissima	Methuselah's beard lichen	fruticose lichen (epiphytic)	4.2		Broadleafed upland forest, North Coast coniferous forest	Low-Coniferous Forest present	Low-Coniferous Forest present
Wyethia longicaulis	Humboldt County wyethia	perennial herb	4.3	May-Jul	Broadleafed upland forest, Coastal prairie, Lower montane coniferous forest	Low-Coniferous Forest present	Low-Coniferous Forest present

APPENDIX C

Results of the CNDDB Database 9-quad Search for Special Status Animals

Central USGS 7.5-minute quadrangle used for search: **Larabee Valley**

Abbreviations for ESA (federal Endangered Species Act) and CESA (California Endangered Species Act) status:					
E	Endangered	**CT**	Candidate Threatened	**P**	Proposed
CE	Candidate endangered	**D**	Delisted		
T	Threatened	**N**	Not listed		

Abbreviations for CDFW status:			
FP	Fully Protected	**N**	Not listed
SSC	Species of Special Concern		
WL	Watchlist		

Scientific Name	Common Name	ESA status	CESA status	CDFW status	General Habitat	Microhabitat	Potential to Occur in:	
							BAA	Project Area
Accipiter cooperii	Cooper's hawk	N	N	WL	Woodland, chiefly of open, interrupted or marginal type.	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Moderate- openings withing coniferous forest present	Moderate- grassland within forest habitat, potential for hunting
Accipiter gentilis	northern goshawk	N	N	SSC	Within, and in vicinity of, coniferous forest. Uses old nests, and maintains alternate sites.	Usually nests on north slopes, near water. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees.	High- North coast coniferous forest present near water with observations made within 5 miles	Moderate- grassland within forest habitat, potential for hunting
Ancotrema voyanum	hooded lancetooth	N	N	N	Occurs mostly in the Shasta-Trinity National forests in the northern half of Trinity County. Associated with limestone substrates, mostly in an	All known occurrences are near streams or in draws (intermittent stream channel). Needs permanent dampness. Late successional conditions provide suitable habitat	Low- preferred habitat not present but several intermittent streams	Low- preferred habitat not present

APPENDIX C

Results of the CNDDB Database 9-quad Search for Special Status Animals

					elevation range of 168-960 meters.	conditions.		
Aquila chrysaetos	golden eagle	N	N	FP WL	Rolling foothills, mountain areas, sage-juniper flats, and desert.	Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Moderate- coniferous woodland and grassland present	Moderate- grassland within forest habitat, potential for hunting
Arborimus pomo	Sonoma tree vole	N	N	SSC	North coast fog belt from Oregon border to Somona County. In Douglas-fir, redwood & montane hardwood-conifer forests.	Feeds almost exclusively on Douglas-fir needles. Will occasionaly take needles of grand fir, hemlock or spruce.	High- North coast coniferous forest present with Douglas fir with observations made within 5 miles	Low- primarily open grassland in Project Area
Ascaphus truei	Pacific tailed frog	N	N	SSC	Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats.	Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.	High- perennial streams present within North coast coniferous forest	Moderate- various watercourses surrounded by coniferous forest
Atractelmis wawona	Wawona riffle beetle	N	N	N	Aquatic; found in riffles of rapid, small to medium clear mountain streams; 2000-5000 ft elev.	Strong preference for inhabiting submerged aquatic mosses	Moderate- perennial stream present within elevation range	None- watercourse streams in BAA
Bombus caliginosus	obscure bumble bee	N	N	N	Coastal areas from Santa Barabara county to north to Washington state.	Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	Moderate- appropriate plant food genera present within broad species range	Moderate- appropriate plant food genera present within broad species range
Bombus occidentalis	western bumble bee	N	C E	N	Once common & widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.		Moderate- within broad species range	Moderate- within broad species range

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Results of the CNDDB Database 9-quad Search for Special Status Animals

Corynorhinus townsendii	Townsend's big-eared bat	N	N	SSC	Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Moderate- coniferous forest and grassland present with human-made structures	Moderate- grassland present with human-made structures, but human disturbances may deter presence
Emys marmorata	western pond turtle	N	N	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.	Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	High- various watercourses present with openings for basking and observations made within 5 miles	High- ponds present in grassland with openings for basking
Erethizon dorsatum	North American porcupine	N	N	N	Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges.	Wide variety of coniferous and mixed woodland habitat.	High- North coast coniferous forest present	Moderate- grassland within forest habitat, but human disturbances
Falco peregrinus anatum	American peregrine falcon	D	D	FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures.	Nest consists of a scrape or a depression or ledge in an open site.	High- forest habitat near watercourses with observations made within 5 miles	Moderate- open grassland with human-made structures
Martes caurina humboldtensis	Humboldt marten	P T	E	SSC	Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County.	Associated with late-successional coniferous forests, prefer forests with low, overhead cover.	Moderate- North coast coniferous forest present	Moderate- Opening within forest habitat, but human disturbance
Myotis evotis	long-eared myotis	N	N	N	Found in all brush, woodland and forest habitats from sea level to about 9000 ft. Prefers	Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night	Moderate- coniferous forest present	Moderate- human-made structures present for potenial

APPENDIX C

Results of the CNDDB Database 9-quad Search for Special Status Animals

					coniferous woodlands and forests.	roosts.		colonies or roosts
Myotis volans	long-legged myotis	N	N	N	Most common in woodland and forest habitats above 4000 ft. Trees are important day roosts; caves and mines are night roosts.	Nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.	Moderate- coniferous forest present but just below 4,000 ft	Moderate- human-made structures present for potential colonies or roosts
Noyo intersessa	Ten Mile shoulderband	N	N	N	Found in coastal dunes, coastal scrub, and riparian redwood forest habitats.		None- preferred habitat not present	None- preferred habitat not present
Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	N	C E	SSC	No. Calif coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS & No. Calif DPS.	Cool, swift, shallow water & clean loose gravel for spawning, & suitably large pools in which to spend the summer.	Low- Class II stream present but likely not appropriate habitat	None- stream watercourses present in BAA
Pandion haliaetus	osprey	N	N	WL	Ocean shore, bays, freshwater lakes, and larger streams.	Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	Moderate- coniferous forest present with watercourses	Moderate- grassland within forested habitat
Pekania pennanti	Fisher	N	N	SSC	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure.	Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	High- North coast coniferous forest present with larger trees	Moderate- opening within appropriate forest habitat, but human disturbance
Rana aurora	northern red-legged frog	N	N	SSC	Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover.	Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	High- permanent water within forested habitat	High- ponds present in grassland with nearby streams
Rana boylii	foothill yellow-legged frog	N	E	SSC	Partly-shaded, shallow streams and riffles with a rocky	Needs at least some cobble-sized substrate for egg-laying. Needs at	High- streams and ponds present within	High- ponds present in grassland with nearby

APPENDIX C

Results of the CNDDB Database 9-quad Search for Special Status Animals

					substrate in a variety of habitats.	least 15 weeks to attain metamorphosis.	coniferous forest	streams
Rhyacotriton variegatus	southern torrent salamander	N	N	SSC	Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest.	Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water.	High- coniferous forest with well shaded areas and watercourses	Moderate- opening within suitable habitat and human disturbances

APPENDIX D

Measures to Prevent the Introduction and Spread of Invasive Species

Recommendations for preventing the spread of invasive species, and rehabilitating areas currenting impacted by invasive species, are as follows:

- Minimize ground disturbance when possible, and restore damage caused by unavoidable disturbances.
- Cover, mulch, seed, or plant disturbed areas to prevent establishment of unwanted plants. Establishing native seed cover is preferred. Monitor the site and control unwanted plants that may appear.
- Reclaim/restore recently altered areas. Heavily disturbed areas are especially prone to the spread of invasive plant species. Immediate reclamation of these areas by planting non-invasive plant species is essential. Establishing native species in restoration activities will help create a desired vegetation cover.
- Make sure any equipment was not used previously in heavily infested areas and is clean of mud, seeds, and other propagules.
- Plants that are native to a site should be selected for use in landscaping whenever feasible. Use reputable nurseries and seed sources Ask vendors if they are aware of restricted species. Check for “hitch-hikers” in nursery stock, packing materials, and associated locations. Use only certified seed, where feasible.
- Use fertilizers wisely. The most commonly used supplemental nutrients in agriculture or landscaping include limiting factors in plant growth, principally nitrogen and phosphorous. High nitrogen levels offer a supreme growth factor for all plants, granting an advantage to invasive plants. Many invasive species have adapted to use plentiful nutrients for explosive growth; therefore, excessive fertilizer application enhances the growth of invasive species. Using soil tests to prescribe proper levels of fertilizer is important. The use of native plants will cut down or eliminate the need for fertilizers, as many native plants can grow well without them.
- Protect native plant communities. A key to controlling invasive plants is to protect native plant communities. Where native plant communities have been displaced, invasive plants thrive, especially on bare soil and disturbed ground. Where native communities are still present, non-invasive plants can move into the empty niche created by the removal of invasive species. Protecting native plant communities from disturbance, deer browse, and other threats will strengthen their ability to resist invasion.
- Develop education and training. Land managers must be trained in invasive species identification, inventory, and control methods.
- Inspect annually for invasive species. Effective scouting will allow managers to identify invasive species before populations increase exponentially and reach levels difficult to control. Identifying and controlling organisms before populations reproduce will result in greater program success.

APPENDIX D

Measures to Prevent the Introduction and Spread of Invasive Species

- Carefully consider location when disposing of mechanically removed invasive plant species Reproductive parts of many invasive plants can withstand seasonal cycles, including drying and freezing. Therefore, invasive plant debris should not be composed, but should be destroyed or carefully collected and discarded with trash to prevent reestablishment, particularly the seeds and roots/rhizomes.
- Prioritize the management of existing on-site invasive species to prevent spread. Travel on roadways and trails is a major conduit for invasive species movement, thus control measures should target high traffic areas, as well as areas where new small populations have been observed. For individual projects, invasive species in areas that are frequently revisited should be treated prior to project initiation and monitored throughout project completion.
- Examine common practices to determine how alterations may reduce the risk of invasive species introduction. To accomplish this task, the U.S. Fish and Wildlife Service employs a method known as Hazard Analysis Critical Control Point (HACCP) planning. This procedure for preventing introduction does not require each land manager to have detailed knowledge of invasive species present at a site. Instructions are available online at: https://nctc.fws.gov/courses/HACCP/haccp.html.
- Review contracts for opportunities to strengthen prevention measures. Added language to existing contracts with internal and external groups may include equipment cleaning requirements, avoiding the use of equipment that has been recently used in infested areas, liability for new invasive species introductions, disturbed habitat remediation guidelines and other appropriate preventive activities.
- Know original sources of transferred and used materials. Require knowledge of the original source and previous sites of transferred topsoil, fill, firewood or other materials brought into a site. Roadside shoulder material, removed during road shoulder maintenance, can be loaded with invasive plant seeds. If the source of this material supported invasive plants, the contaminated

APPENDIX E

Qualifications

Tami Camper
Owner-Founder

Tami is the founder of TransTerra Consulting LLC. She obtained a B.S. in Environmental Science from Western Washington University and M.S. in Biology from Humboldt State University. She has worked on publications including a rare plant guide for timberlands of Mendocino County published by MCRCD. She has worked as a professional biologist and planner for over 20 years, specializing in wetland/stream surveys, wildlife/vegetation mapping, rare species surveys, biological assessments, impact assessments, mitigation and monitoring plans, CEQA/NEPA and land-use planning. Though she has worked as an independent consultant for most of her career, she has also worked for HSU, Caltrans, Mendocino Redwood Company, and Streamline Planning (now SHN) to round out her experience. Her desire is to implement her diverse background and passion for the natural world to aid clients through the environmental process. She also is also a member of the Arcata Sunrise Rotary Club, California Native Plant Society, The Wildlife Society, The Society of Wetland Scientists and other local non-profits and professional organizations.

Margaux received her Bachelor's Degree in Molecular Biology from the California State University of Monterey Bay in 2018. She grew up in Humboldt and is very familiar with the unique geological and political landscape. Her experience encompasses restoration, environmental education, and lab techniques. She strives to utilize her molecular background to share an in depth understanding of the environmental field to promote policy and preservation.

Margaux Karp
Biologist/Planner

Holly Vadurro
Biologist/Botanist

Holly earned a Bachelor's degree in Biology from College of Charleston, in 1996. She came to Humboldt State University through the student exchange program and knew she had found her home. During her first years here, her job enabled her to explore the expanse of Humboldt County and perform various biological field surveys including botanical, fishery, mollusk, amphibian, bryophyte and migratory birds. She also performed landslide analyses. Later on, she worked at Winzler and Kelly Consulting Engineers (now GHD) as an Environmental Scientist and conducted wetland delineations, botanical surveys, and collected and analyzed water quality data.

Megan received her Bachelor's degree in Botany from Humboldt State University in 2019. She will be returning to HSU to pursue her Master's degree in Biology with a thesis focusing on fossil plants from the lower Devonian of Québec, Canada. Her previous work experience includes curation and care of an extensive living collection of plants from around the world, state-of-the-art biological lab facility and research equipment maintenance, and education. Currently, she is working on a diversity survey of ancient plants and will be presenting an oral paper at the Botanical Society of America conference this summer.

Megan Nibbelink
Botanist

APPENDIX F

Regulatory Setting for Biological Resources

F.1.0 REGULATORY BACKGROUND

F.1.1 CANNABIS CULTIVATION

Commercial cannabis was recognized as an agricultural crop under the Medical Cannabis Regulation and Safety Act while Proposition 64 determined legalization of use. The California Department of Food and Agriculture implements the CalCannabis program which regulates commercial cannabis licensing from a state level. At the local level Humboldt County regulates commercial cannabis licensing through the Commercial Cannabis Land Use Ordinance (CCLUO). Both state and local licensing must be obtained to operate commercial cannabis cultivation in the state of California.

F.1.2 HYDROLOGICAL HABITATS

F.1.2.1 U.S. ARMY CORPS OF ENGINEERS (USACE)

The USACE Regulatory Branch regulates activities that may discharge dredged or fill materials into "waters of the U.S." under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. This permitting authority applies to all "waters of the U.S." where the material (1) replaces any portion of a "waters of the U.S." with dry land or (2) changes the bottom elevation of any portion of any "waters of the U.S.". These fill materials include sand, rock, clay, construction debris, wood chips, and materials used to create any structure or infrastructure in these waters. The selection of disposal sites for dredged or fill material is done in accordance with guidelines specified in Section 404(b)(1) of the CWA, which were developed by the U.S. Environmental Protection Agency (USEPA).

F.1.2.2 REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)

The RWQCB is the primary agency responsible for protecting water quality in California through the regulation of discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The RWQCB's jurisdiction extends to all "waters of the State" and to all "waters of the U.S.," including wetlands (isolated and non-isolated).

Section 401 of the CWA provides the RWQCB with the authority to regulate, through a Water Quality Certification, any proposed, federally permitted activity that may affect water quality. Among such activities are discharges of dredged or fill material permitted by the USACE pursuant to Section 404 of the CWA. Section 401 requires the RWQCB to provide certification that there is reasonable assurance an activity with the potential for discharge into navigable waters will not violate water quality standards. Water Quality Certification must be based on findings that the proposed discharge will comply with water quality standards, which contain numeric and narrative objectives found in each of the nine RWQCBs' Basin Plans.

F.1.2.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The CDFW has jurisdictional authority over wetland resources associated with rivers, streams, and lakes pursuant to the California Fish and Game Code (§§1600–1616). Activities of state and local

APPENDIX F

Regulatory Setting for Biological Resources

agencies, as well as public utilities that are project proponents, are regulated by the CDFW under Section 1602 of the California Fish and Game Code.

Because the CDFW includes streamside habitats under its jurisdiction that, under the federal definition, may not qualify as wetlands on a project site, its jurisdiction may be broader than that of the USACE. Riparian forests in California often lie outside the plain of ordinary high water regulated under Section 404 of the CWA, and often do not have all three parameters (wetland hydrology, hydrophytic vegetation, and hydric soils) sufficiently present to be regulated as a wetland.

However, riparian forests are frequently included within CDFW regulatory jurisdiction under Section 1602 of the California Fish and Game Code.

The CDFW jurisdictional limits are not as clearly defined by regulation as those of the USACE. While they closely resemble the limits described by USACE regulations, they include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric and saturated soils conditions. In general, the CDFW extends jurisdiction from the top of a stream bank or to the outer limits of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place within or near a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish and other aquatic plant and/or wildlife species. It also includes watercourses that have a surface or subsurface flow that support or have supported riparian vegetation.

F.1.2.4 HUMBOLDT COUNTY-STREAMSIDE MANAGEMENT AREA

“Streamside Management Areas” (SMAs) [Section 3432(5) of the Humboldt County 1984 General Plan] are defined in the Humboldt County General Plan (Page G-8) and include a natural resource area along both sides of streams containing the channel and adjacent land. Updates to the SMA guidance for cannabis activities are defined in the Environmental Impact Assessment Biological Resources Section (Board of Supervisors et. al 2017).

Project applicants proposing development activities within a SMA or wetland areas are required to include a site-specific biological report prepared consistent with these regulations. The written report prepared by a qualified biologist is subsequently referred to CDFW for review and comment. If required, after agency review of the preliminary habitat assessment, protocol level surveys will be completed per recommendations by the Final Environmental Impact Report (FEIR) amendments to the Humboldt County Code Regulating Commercial Cannabis Activities (Ascent Environmental 2018).

F.1.3 SENSITIVE SPECIES

F.1.3.1 SENSITIVE NATURAL COMMUNITIES

Sensitive Natural Communities have been defined by CDFW and the California Native Plant Society (CNPS) as vegetation types with a state rank of S1-S3. Ranks are assessed by the most recent scientific information of the community’s range, distribution, and the proportion of occurrences that are of good ecological integrity including threats and trends. While CEQA presents no specific

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protocols for avoiding or mitigating impacts to these communities, considerations are afforded during environmental review.

F.1.3.2 SENSITIVE AND PROTECTED SPECIES

Sensitive and protected species include those plants and wildlife species that have been formally listed or are candidates for either listings under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford legal protection to both listed and candidate species. CEQA affords special consideration to species listed by CDFW as Species of Special Concern and Fully Protected. Additionally, the Migratory Bird Treaty Act (MBTA) protects many birds in the United States, including those not having special-species status. Under MBTA destroying active nests, eggs, and young is illegal.

F.1.4 ADDITIONAL LAWS AND POLICIES

In addition to the above-mentioned policies, numerous other policies exist to protect wetlands, waters and biological resources including the California Environmental Quality Act (CEQA), California Endangered Species Act (CESA) and the Z'berg-Nejedly Forest Practice Act.